

GRAIN & FEED JOURNALS

CONSOLIDATED

Vol. LXXVII. No. 10

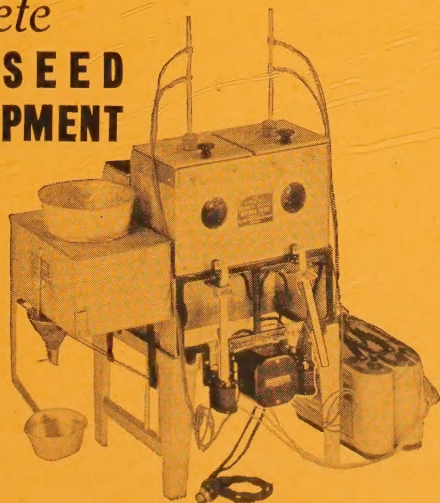
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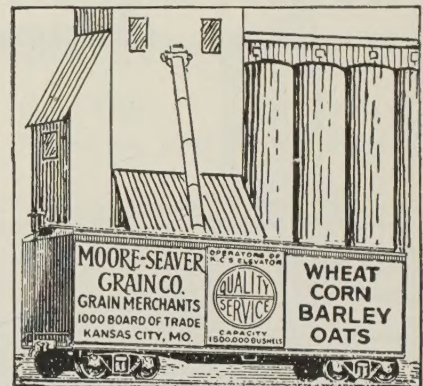
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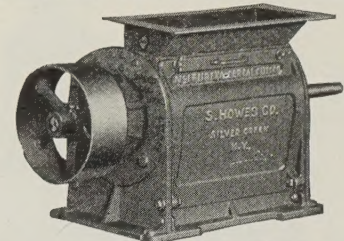
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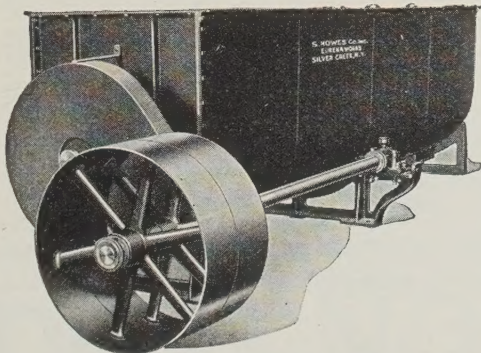
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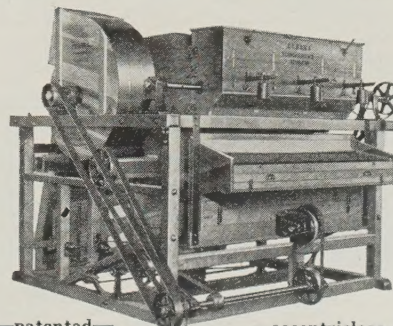


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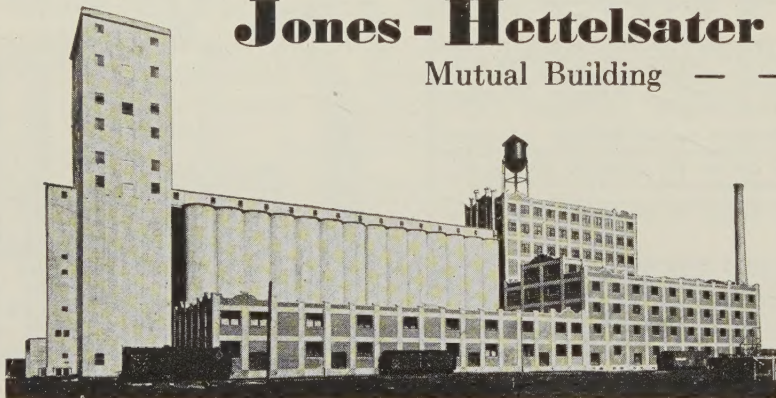
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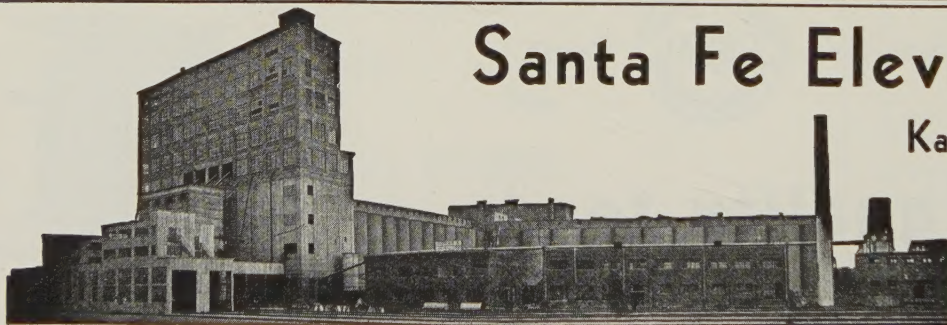
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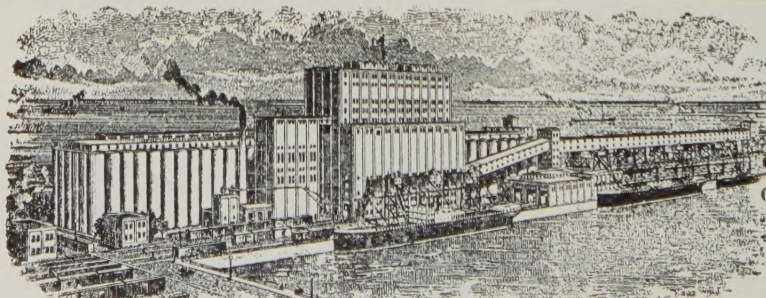
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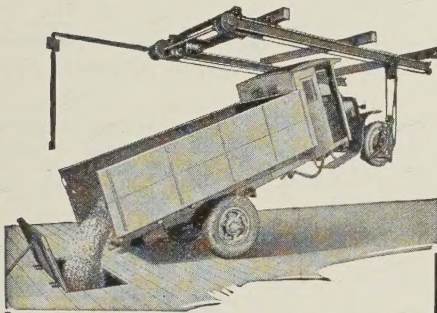
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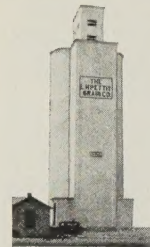
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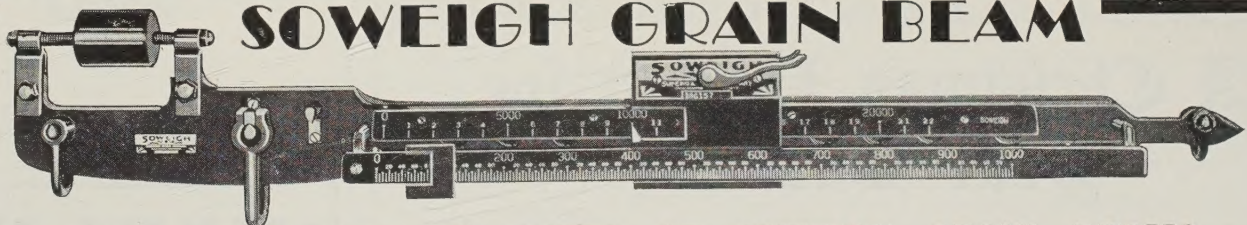


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CENTRAL ILLINOIS—Two modern elevators; in corn belt; excellent properties, location and business. Terms. Address 76U10, Grain & Feed Journals, Chicago, Ill.

KENTUCKY—125,000 bus. concrete elevator for lease or sale, to close estate. Located in famous Bluegrass section of state; excellent transit facilities to Carolinas and E. Tenn. Address P. O. Box 480, Lexington, Ky.

MINNESOTA—125,000 bus. iron clad frame cleaning and transfer elevator for sale, electric power, fast handling, good cleaner equipment, Northwestern road, a good transit point, and in good barley territory. Real bargain price. Banner Grain Co., Minneapolis, Minn.

BARGAIN IF TAKEN AT ONCE—Some one is always looking for an elevator at a good grain point and reads these ads just like you're doing now, so if you wish to dispose of your present property, enlarge your present interests, or embark in the grain business, USE these columns to your best advantage just as others are doing. WE WILL assist you in the composition of copy free. We are in business to be of service to YOU. There is no wrong time to put an ad in the columns of the Journal. TRY IT.

ELEVATORS WANTED

KANSAS Elevator practically sold after three insertions. Here's what the advertiser writes: "We enclose check for three insertions of our ad. We have had more than a dozen inquiries from our ad and believe that we will be able to effect a sale." This proves conclusively the value of a Journal Want-Ad.

MISCELLANEOUS

WANTED—All kinds Sheet Metal work; Painting or repairing on elevators. O. L. Conaway, Phone 69, Toledo, IOWA.

FOUND IN INDIANAPOLIS

in corn bin at the Cleveland Grain Co. elevator, a Masonic emblem. Anyone describing this can get it by addressing O. P. Larimore, % Cleveland Grain Co., 606 Board of Trade, Indianapolis, Ind.

HELP WANTED

WANTED—Salesmen to handle best line of farm salt to elevators and stores on commission basis. For particulars, write Box 328, Saginaw, Mich.

SITUATION WANTED

COMPETENT elevator manager with several years' experience desires change of location. Grain men and banks for reference. Address 76U8, Grain & Feed Journals, Chicago, Ill.

POSITION WANTED as manager of Grain Business, 20 years in grain, seeds and feed. Can handle books. Best references. Address 76W1, Grain & Feed Journals, Chicago, Ill.

COMPETENT AND EXPERIENCED elevator managers, foremen, bookkeepers, auditors, second men and solicitors can easily and quickly be found through an ad in the "Help Wanted" column of the Grain and Feed Journals, Consolidated, Chicago, Ill.

SAMPLE ENVELOPES

SAMPLE ENVELOPES—SPEAR SAFETY—for mailing samples of grain, feed and seed. Made of heavy kraft paper, strong and durable; size 4½x7 inches. Have limited supply to sell at \$2.35 per hundred, or 500, \$10.00 plus postage. Sample mailed on request. Grain & Feed Journals, 332 S. La Salle St., Chicago, Ill.

BUSINESS OPPORTUNITIES

WHATEVER your business may be, it will find a ready market if advertised in the "Business Opportunities" columns of GRAIN & FEED JOURNALS, Chicago. 9,800 grain men look to these columns twice each month for real opportunities.



True Christmas Cheer...

Help to Make Others Healthy



The National, State and Local Tuberculosis Associations of the United States

A Christmas Present for Your Business

that will assist it to avoid the snares and pitfalls of new trade highways. Send it the convictions, suggestions and experiences of your brother grain dealers twice each month by subscribing to

Grain & Feed Journals Consolidated

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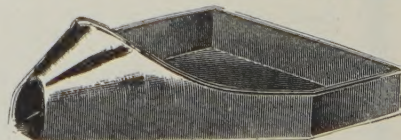
Gentlemen:—In order that I may profit by the experience of others in the grain trade, please send me the Grain & Feed Journals Consolidated twice each month. Enclosed find Two Dollars to pay for one year.

Name of Firm.....

Capacity of Elevator Post Office.....

.....bus. State.....

SAMPLE PANS



Formed by bending sheet aluminum, reinforced around top edge with copper wire. Strong, light, durable. The dull, non-reflecting surface of aluminum will not rust or tarnish; assists users to judge of the color and to detect impurities.

Grain Size, 2½x12x16½", \$2.00; Seed Size, 1½x9x11", \$1.65, at Chicago.

GRAIN & FEED JOURNALS
Consolidated

332 So. La Salle St., Chicago, Ill.

MACHINES FOR SALE

CORN CUTTER & Grader—has motor—used very little. 76D6 Grain & Feed Jnl's., Chicago.

HAMMER MILL with 25-h.p. motor and all attachments. Priced to sell. Write 76D7 Grain & Feed Journals, Chicago, Ill.

FOR SALE—Practically new elevator belt, 90 feet long, 11 inches wide, with cups. H. H. Haines, Charles City, Iowa.

FEED MIXER for sale, has motor, and a late machine. Need space. Will sacrifice. Write 76D5 Grain & Feed Journals, Chicago, Ill.

FEED MIXER—one ton—floor level feed—has motor—good as new. Write 76D8 Grain & Feed Journals, Chicago, Ill.

MOISTURE tester complete; Boss Car Loader; manlift; 50 bu. hopper scale; feed chain; type Z engine. A-1 bargains. W. W. Pearson, Reynolds, Ind.

VERTICAL MIXER bargains, priced delivered; also re-built motor bargains, guaranteed same as new. Address Midwest, 728 E. Delaware, Kansas City, Mo.

TRUCK LIFT—We are installing electricity, and have for sale an overhead truck lift, operates from line shaft. Serves any number of dumps. Ball bearing reduction unit makes it positive, safe and rapid. T. E. Hamman & Co., Arcola, Ill.

ANDERSON'S SUPERIOR FEED MIXERS
New and used, above and below floor hoppers, 500, 1,000 and 2,000 pound sizes. Best Hog Feeders made, three sizes. Buy direct from factory. Write for circulars and prices. Anderson Manufacturing Co., Paris, Ill.

FOR SALE—CHEAP

- 1—50 h.p. steam engine
- 1—50 h.p. brick set boiler

In splendid condition. Must move promptly. Also: 1—22" Robinson belt driven attrition mill. Goodrich Bros. Co., Winchester, Ind.

FOR SALE

30 hp Papec Mill complete with motor
No. 4 Monitor Receiving Separator
No. 122 Standard Seed Cleaner
50 hp Type Y, F-M Engine
26" Bauer Attrition mill with 2, 25 hp motors
½ ton Vertical Feed Mixer
½ ton Horizontal Feed Mixer
Send for complete list of rebuilt machinery.
Sidney Grain Machinery Co.
Sidney, Ohio

REBUILT MACHINES

No. 0 Victor Corn Sheller.
No. 12 Western Corn Sheller.
No. 1 Munson Corn Cutter with magnetic separator.
No. 1B Eureka Corn Cutter with magnetic separator.
Jay Bee Cracker Jack Hammer Mill.
9x18 3 pair high Wolf Roller Mill with collar oil bearings.
Write P. O. Box 104, Union Station Plaza, Kansas City, Mo.

Affidavit of Weight

(Duplicating)

This form is designed for use in making sworn statements of amount of grain loaded to substantiate claims for loss of grain in transit or when dispute arises. Printed on bond paper, in black ink, size 5½x8½ inches, and bound in books of 50 blanks, perforated, and 50 duplicates, with heavy binders board bottom and hinged pressboard top, with two sheets of carbon. Order Form 7 A.W. Weight, 8 oz. Price 75c; three copies \$2.00, plus postage

**Grain & Feed Journals
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332 S. La Salle St., Chicago, Ill.

MOTORS—GENERATORS**SAVE on MOTORS and GENERATORS**

Write for new Free Catalog of guaranteed rebuilt Motors, Generators, Pumps, Compressors, etc. We Save you Half. Your Idle equipment taken in trade. Specials in totally enclosed motors, as well as other Bargains.
Chicago Electric Co., 1331 W. 22d St., Chicago.

SCALES FOR SALE

MOTOR TRUCK SCALES, all capacities; guaranteed; lowest prices; terms. Also used scales. Bonded Scale Co., Manufacturers, Columbus, O.

SELL YOUR SECOND HAND Machines
Now—tomorrow they will not be worth as much as they are today. A shiny machine which has just been in operation sells quicker and brings a bigger price than a dirty, rusty one.

RAT EXTERMINATOR

RAT LUNCHES—Kills rats and mice without poison. Ready to use. Just lay them out. Endorsed by agricultural authorities. \$1 large package—\$3.50 a carton prepaid. Salesmen-Distributors wanted. Rat Lunches Co., Carroll, Ia.

Clark's Car Load Grain Tables

Eighth edition, extended to show bushels in largest carloads, shows the following range of reductions of pounds to bushels by fifty pound breaks.

20,000	to 129,950 lbs.	to bushels of 32 lbs.
20,000	" 74,950 "	" " 34 "
20,000	" 118,950 "	" " 48 "
20,000	" 140,950 "	" " 56 "
20,000	" 140,950 "	" " 60 "

Pounds in red ink; bushels in black, 48 pages. Lined ledger paper reinforced, bound in keratol with marginal index. Weight, 8 oz.

Price \$2.50 at Chicago

GRAIN & FEED JOURNALS Consolidated

332 So. La Salle St., Chicago

SEEDS FOR SALE


SEED OATS that grow and win favor with those who plant them. Rice Grain Co., Metamora, Ohio.

YOUR NAME

where every progressive grain dealer will see it, will convince them you are equipped to serve them.

That is in the

Grain & Feed Journals
OF CHICAGO



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Scale and Credit Tickets

Form 51 Duplicating contains 100 leaves of white bond paper, each leaf bearing five tickets like one illustrated herewith, machine perforated for easy removal, and 100 leaves of yellow post office paper, each leaf bearing five duplicates which remain in the book. Also 4 sheets of No. 1 carbon. Size of book 5½x13¾ inches, check bound, well printed. Each leaf is one ticket wide and five tickets deep.

Order 51 Duplicating 500 tickets. Price, \$1.00, plus postage. Weight, 1¾ lbs.

Cash with order for twelve books earns 10% discount.

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From	_____		
To	_____		
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Tare	_____ lbs.	_____ or Order.	
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Net	_____ bus.	_____ lbs.	Weigher.

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★ CLEAN, GRADED & ★ TREATED SEED GRAINS

★ pays big dividends in bigger and better
★ crops. Cleaning, grading and treating
★ machinery in an elevator brings cus-
★ tomers for this service who return to
★ sell their grain.

★ Write us for literature on low cost machines

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Shipping Notices Duplicating

A convenient form for advising receivers of the grade,
kind and weight of grain shipped.

Loaded into car—initials and number, seal numbers, at.....
station on.....date; billed shipper's order notify.....;
draft for \$.....; made through.....bank of.....
to apply on sale of.....bushels made.....

Fifty white bond originals, machine perforated, easily
removed without tearing, and 50 manila duplicates, bound
in heavy pressboard, hinged covers, with two sheets of
carbon. Size, 5½x8½ inches. Weight, 8 ounces. Order
Form 3 SN. Single copy, 75c; three copies, \$2.00, f. o. b.
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GRAIN & FEED JOURNALS

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Chicago, Ill.



Grain Receiving Books

Grain Receiving Register for recording loads of grain received
from farmers. It contains 200 pages of ledger paper 8¼x13¼
inches, capacity for 8,200 loads. Some enter loads as received,
others assign a page to each farmer, while others assign sections
to different grains. Bound in strong board covers, canvas back.
Headings of columns are: "Date, Name, Kind of Grain, Gross,
Tare, Net, Bushels, Pounds, Price, Amount, Remarks." Weight,
2¼ lbs. Order Form 12AA. Price \$2.50, plus postage.

Wagon Loads Received has columns headed: "Month, Day,
Name, Kind, Gross and Tare, Net Pounds, Bushels, Pounds,
Price, Dollars and Cents, Remarks." Contains 200 pages of
ledger paper size 9¼x12 inches, providing spaces for 4,000 loads.
Bound in heavy boards with strong cloth covers and keratol
corners and back. Weight, 2 lbs. Order Form 380. Price \$2.50,
plus postage.

Receiving and Stock Book is arranged to keep each kind of
grain in separate column so each day's receipts may be easily
totaled. It contains 200 pages linen ledger paper size 9¼x12
inches, ruled for records of 4,000 loads. Well bound in black
cloth and keratol back and corners. Shipping weight, 2¼ lbs.
Order Form 321. Price \$2.50, plus postage.

Grain Receiving Ledger has 200 pages linen ledger paper and
28-page index, 8¼x13¼ inches, numbered and ruled for 44 en-
tries. Well bound in pebble cloth with keratol back and cor-
ners. Weight, 3 lbs. Order Form 43. Price, \$3.00, plus postage.

Form 43 XX contains 428 pages. Shipping weight 4½ lbs.
Price \$5.00, plus postage.

Grain Scale Book is designed to assign separate pages to each
farmer and their names can be indexed so their accounts can
be quickly located. It contains 252 numbered pages and 28-
page index, of high grade linen ledger paper 10½x15¼ inches.
Each page will accommodate 41 wagonloads. Well bound with
heavy board covers with cloth sides and keratol back and cor-
ners. Weight, 4½ lbs. Order Form 23. Price, \$4.00, plus postage.

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Charles S. Clark, Manager

A merger of
GRAIN DEALERS JOURNAL
Established 1898

**AMERICAN ELEVATOR &
GRAIN TRADE**
Established 1882

THE GRAIN WORLD
Established 1928

PRICE CURRENT - GRAIN REPORTER
Established 1844

Published on the second and fourth Wednesdays of each month in the interests of better business methods for progressive wholesale dealers in grain, feed and field seeds. It is the champion of improved mechanical equipment for facilitating and expediting the handling, grinding and improvement of grain, feeds and seeds.

SUBSCRIPTION RATES to United States, Canada and countries within the 8th Postal Zone, semi-monthly, one year, cash with order, \$2.00; single copy current issue, 25c.

To Foreign Countries, prepaid, one year, \$3.00.

THE ADVERTISING value of the Grain & Feed Journals Consolidated as a medium for reaching progressive grain, feed and field seed dealers and elevator operators is unquestioned.

Advertisements of meritorious grain elevator and feed grinding machinery and of responsible firms who seek to serve grain, feed and field seed dealers are solicited. We will not knowingly permit our pages to be used by irresponsible firms for advertising a fake or a swindle.

LETTERS on subjects of interest to those engaged in the grain, feed and field seed trades, news items, reports on crops, grain movements, new grain firms, new grain elevators, contemplated improvements, grain receipts, shipments, and cars leaving grain in transit, are always welcome. Let us hear from you.

QUERIES for grain trade information not found in the Journal are invited. The service is free.

CHICAGO, ILL., NOVEMBER 25, 1936

POSTING prices and sticking to them convinces prospective customers you are bidding all you can afford to pay for grain.

IF YOU employ eight or more persons you will find much of real interest in Mr. Kix Miller's article on "New Federal Taxes for Payrolls."

SO MANY convincing reports of carefully conducted experiments in feeding soybeans and soybean meal, have been published in the trade press, the wonder is farmers will consider the use of the whole bean when the meal is obtainable.

EMPLOYERS will find it necessary to have a physical examination of workmen to protect themselves against unreasonable claims under state workmen's compensation laws, as in Idaho where a man went blind in a seed warehouse when he lifted a sack of beans and suffered a retinal hemorrhage really due to miliary tuberculosis existing before he entered the company's employ.

ITS EARS to the ground the A. A. A. announced Nov. 23 that farm spokesmen from 10 north central states had recommended that the soil conservation program be overhauled to allow expanded plantings of corn and spring wheat in 1937.

TOLERATION of an out-of-date or worn out manlift is a most expensive practice. The sacrifice of lives and limbs can be prevented by the installation of a modern safety manlift, while one accident is likely to cost many times the price of the latest and best manlift.

THE FLOOD of Argentine corn and Canadian wheat now depressing U. S. markets will prompt growers to send special thanks to the farm agitators who demanded and are directly responsible for the planned scarcity which now profits the grain growers of other lands so generously.

FEED MIXERS who have tabular data on the digestible nutrients in the different feed ingredients are able to profit by changes in the market prices of the ingredients. During the past three months bran and middlings have advanced \$5 per ton while cottonseed meal has remained stationary.

A FEW YEARS' EXPERIENCE has given observing farmers a clear understanding of the A. A. A.'s planned scarcity with the result that the National Grange at its recent Cleveland convention unanimously opposed revival of the old A. A. A., declaring the A. A. A. had been disastrous.

THE ROVING trucker peddler who deals in any commodity that he thinks can be transported at a profit, is sure to have an unpleasant winter. Many bills are now being drawn for presentation to the state legislatures that are designed to make it difficult for nomadic peddlers to undermine the leading merchants of country communities.

SAFE - GUARDING MOVING machinery has never brought regret to employer or employe, but it has saved many limbs and some lives. Everyone interested in protecting lives and limbs of their employes and customers should enjoy protecting moving machinery and thereby prolonging the lives and efficiency of the elevator's workers.

GRAIN DEALERS manufacturing feed can find many opportunities to associate their business with the current Holiday period and increase the volume of their sales thru judicious use of advertising. More turkeys will need fattening for Christmas dinners. And if farmers in the community raise geese and ducks, a special fattening feed for this class of poultry should find a ready market. If you have it, tell your community of its merits.

SPRING wheat growers have declared themselves opposed to acreage restriction as planned by the bureaucrats, recognizing in their protest that the increase in the acreage by the winter wheat growers would render such limitation nugatory. Since cutting down the acreage will not net them more cents per bushel but only decrease the number of bushels they have to sell to their loss is obvious.

THE DEARTH of desirable seed produced an excellent opportunity for grain dealers at every station to co-operate with the progressive farmers of their community in securing the introduction of seed of pure variety. Wheat of mixed varieties is generally discounted sharply by discriminating buyers because miller's experience difficulty in obtaining satisfactory results from car lots of mixed varieties.

THE GRAND opening of an Iowa Elevator which is illustrated on pages 430 and 431 was made a gala day of the entire community and of course, the celebration helped to familiarize prospective patrons with the new plant's improved facilities for serving its trade. Grain merchants who overhaul or improve their facilities for serving their trade, will find the attractive advertising of the grand opening a real business producer.

IT HAS been so long since any of our readers reported cars leaking grain in transit, we suspect that all railroads are furnishing shippers with leak-proof box cars equipped with grain tight doors. However, if the box cars of any vigilant carrier are detected leaking, we will appreciate a full report of the place, date, initials, number, contents, to the end that we may help the shipper to authenticate his claim for loss in transit.

ESTIMATING the amount of grain in a bin accurately is not so difficult a task when the estimator has before him a chart such as that on page 428, by the use of which he side-steps the working out of the formulas that express the factors going into the chart. The many elevator superintendents, weighmasters and state and federal custodians who may use the chart in their daily work will be pleased to discover that the author in the accompanying text has explained exactly how the chart has been constructed.

YEARS AGO the Provincial Government of Manitoba bought or built 168 country elevators and after a short trial decided it couldn't operate them satisfactorily or profitably so sold or leased them. Now the Canadian Government has closed three more of its large storage elevators in the prairie provinces. Few, if any, governments have ever succeeded in any business undertaking yet the politicians persist in pushing the taxpayers into business with no prospect of ever improving the service or reducing the cost.

BUROCRATIC schemes to cut down production of crops and to continue paying out farm benefits in addition to the \$1,684,984,551.50 already expended do not seem warranted in view of the fact that average net farmer income in 1935, excluding Federal rental and government payments, amounted to between \$873 and \$919 for the country as a whole, compared with \$1,041 for employed wage earners. In the Mountain states and on the Pacific Coast the National Industrial Conference Board reports net farm income materially higher than wage earners' income.

WHAT USED to be considered the "seed booking season," when the representatives of seed wholesalers visited the retailers and wrote orders for their spring requirements, to be delivered at a specified time during the winter and early spring, lies just ahead. The trying times suffered by all wholesalers of seeds during the last few years has discouraged the practice of "booking." But the short supplies of many field seeds caused by the drouth conditions of last summer may again revive the practice, as many country elevators and retailers will fear inability to get seed supplies when they are needed unless "booked" well ahead.

ADOPTION of the 6-hour day on the railroads would so increase the cost of operation that some branch lines would have to be closed, many agency stations would have to be abandoned and some freight and passenger trains would have to be discontinued. Instead of employing more men as desired the railroads would leave the former railroaders still unemployed. The shorter work week was tried out in a Minneapolis flour mill resulting in a strike recently by the men who rightly claimed they could not earn enough money that way. Earnings and production usually are proportionate to the time devoted and the country grain buyer voluntarily works himself more than 6 hours a day.

THE SEVERAL Robinson - Patman Act prosecutions recently instigated by the Federal Trade Commission are singularly free from any suggestion of moral obliquity on the part of the defendants. If this continues it may become an honorable distinction to have been cited before the Commission, as witness the yeast manufacturers, who are guilty of charging more per pound for a quart than for a carload of bakers' yeast, without discriminating between buyers by reason of age, race, nationality or previous condition of servitude. What is the position of the buyer of 50,000 pounds of yeast at a less price per pound than the purchaser of 150 pounds? How can he arrive at a price that will not render him liable to prosecution under the Act? Such impractical laws make our legislators appear ridiculous.

IF RAILROADS would reduce their rates on grain and other commodities that are now moved largely by truck, to a basis competitive with the rates offered by the trucking peddler they would soon reclaim a considerable volume of the business they have lost. In Texas, where the railroads are reported to have made competitive intrastate rates in many cases, the trucking business has become less of a factor on long distance hauling of grain and feed. The Pettengill bill, which will again be offered in the coming Congress, deserves the support of all shippers who are interested in seeing the railroads given more freedom in the making of rates.

ACCUMULATION and distribution of grain and other commodities can only proceed under the protection of the police power and of the courts, both supported by taxes. To stay in business the private enterprise must therefore pay taxes and the same taxes should be paid by the co-operative enjoying the same protection, except that the co-operative is exempt from taxes on profits because it has none. No one can blame the co-operative of the State of Washington for going into court to escape the business tax, since none of us pay more taxes than forced to by law. To an unbiased mind it seems reasonable that the Washington court has followed the Indiana court in holding a co-operative subject to the sales tax. Both methods of distribution are given a fair field and no favor.

Sampling and Grading Improving

The careful sampling of each car's contents is absolutely necessary if the inspector's grading is to reflect the quality of the car's contents. As is clearly pointed out by Chief Inspector Ahlman, satisfactory grading is impossible without careful, conscientious sampling.

The grain trade has worked for years to secure the improved grading of shipments and each year the reduced changes in the grading of cars appealed, shows conclusively that the samplers, inspectors and supervisors are exercising greater vigilance than ever and thereby rendering a more dependable service to grain shippers and buyers.

The unexpected success of recent sessions of the grain grading schools conducted under the supervision of a federal supervisor, shows conclusively that grain merchants are eager to attain greater efficiency in judging of the quality of the grain they handle. When the shippers become more proficient in classifying their purchases, they will surely obtain more satisfactory returns from their shipments. When the practices and methods of sampling and grading grain are uniform throughout the land, uniform results can be expected.

Caution Against Corn Disease

It is feared by veterinarians that the cornstalk disease that killed 5,000 horses in 1934 will again take a heavy toll.

Weather conditions in the central part of the corn belt the past season resulted in much corn being damaged, worm eaten or rotten. Animals not given sufficient other feed will eat rotten corn picked up by them in the cornfield.

So many deaths are reported to the state universities of Indiana and Illinois that grain men are urged to co-operate in warning horse-owners to avoid feeding damaged corn.

The Maritime Strike

The tie-up of grain exports and all water movement at United States Pacific Coast ports has developed an apathy on the part of the shipowners very disconcerting to the longshoremen.

Influenced by agitators the dock workers have cut the work day to six hours, against 8 hours in British Columbia. They have slowed down the work so that much of the stevedoring is done on the basis of overtime pay. This has gone on progressively for years until the shipowners are losing money.

The present impasse is due to the fact the owners lose money anyway whether they operate or not. The coastwise operators, particularly, if the strike is settled as desired by the longshoremen, will go out of business, in any event, leaving the traffic to the rails.

Shippers of grain and grain products who are near enough north are urged to use Vancouver as an outlet when for export, as the Canadian unions of longshoremen are not dominated by communistic agitators.

Another Canadian Grain Trade Inquiry

The last Royal Commission to inquire into the grain trade of Canada evidently did not aid the propaganda of the pools, the English economist who was brought over to assist having taken the sane view that the private grain trade was functioning efficiently, so another inquiry was authorized.

This November the new Royal Commission headed by a jurist of reputation begins a series of hearings on the grain trade. If this inquiry is to be of any value it should dissect the cadaver of the old pool. Sufficient time after its death has elapsed to make complete findings in a post mortem statement warning wheat growers against the fallacy, inherent in pooling operations, that look to market control to elevate prices.

Distribution of grain from farmer to consumer, whether under the pool or private enterprise, involves the same employment of managers, clerks and laborers, elevating and storage facilities; and the Royal Commission could perform a pub-

lic service by pointing out that this service must be paid for in any event.

Grain Door Charge Not Justified

The finding by an examiner of the Interstate Commerce Commission that the railroad companies may be permitted to charge 60 cents per car instead of the \$1 per car charge in the proposed tariffs ignores the fundamental principle that the installation of grain doors at terminal markets is a burden that rests exclusively upon the railroad companies.

Why give the carriers one-half of what they ask when they are entitled to nothing?

What would the grain merchant think of vacillating arbitration com'ite that split the difference by awarding the plaintiff \$500 when he asked for \$1,000, when the merits of the case showed the defendant owed him nothing on a strict interpretation of the contract? What of a criminal court in doubt of a murderer's guilt that judged the accused should be hung by the neck until half dead?

At terminals the situation is different from that at country stations where the railroads have no experts to cooper cars or install grain doors.

The Commission itself said in the case of the National Lumber Dealers Ass'n: "Furnishing inside car doors to shippers of grain is a custom that dates back from about 1879, and the presumption is that freight rates are maintained with respect thereto." In other words, when the shipper pays the freight he pays for the grain doors and their installation. He should not be required to pay for them twice.

The Commission can dispose of the whole matter in short order by going back to its own ruling in 56 ICC 347, on claims for loss and damage of grain where it held "Cars shall be inspected and cleaned and grain doors and other cooperage installed as provided in appendix 5 either by the shipper or the carrier, according as the duty to perform these services is fixed specifically by law, or is determined by lawful custom or agreement."

The fact that carriers have installed the grain doors for 24 years past free of charge certainly establishes the custom.

The charge for installing grain doors being wholly unjustified it would seem unnecessary for shippers to consider the expense properly borne by the railroads. It has been proved, however, that the labor cost averages for complete coopering 10 cents and for installation 7 cents, a total of 17 cents per car, for which the examiner would allow 60 cents.

This attempt to sneak in a charge for installation of grain doors is only a roundabout way to disguise an increase in the rate for the road haul of grain.

If the railroad tendered a box car without any grain doors or with a broken

floor and the shippers' helpers thoughtlessly loaded grain into the defective car the courts would require the carrier to pay for any shrinkage in the volume of grain between the loading and destination points.

Box cars without grain doors are not suitable for transporting grain. The railroad is ever ready to supply special cars for livestock, coal, sand, automobiles, heavy machinery or what have you, so why not supply complete leak-proof cars for grain. No box car is suitable for transporting grain without wheels, a roof or grain doors. If grain shippers are to be required to supply any of the facilities needed safely to transport grain over the rails then insist all be required to furnish their own cars in perfect condition for complete delivery and be held liable for any shrinkage in transit.

Illinois Elevators Licensed to Store Grain

Illinois operators of country elevators have been experiencing difficulty in storing grain for farmers who were anxious to take advantage of higher markets. Recently twenty-five Illinois country elevators have leased space to a warehousing company so as to facilitate the storage of grain and the borrowing of money on grain in store, all of which will undoubtedly delight farmers who are anxious to speculate in the cash article.

Under this arrangement, a tender-hearted elevator operator will not be in position to waive the storage charges or pay the highest market price prevailing during the storage period, even though it assures him a heavy loss as in years gone by. The local elevator operator will have no control of storage charges which will be published the first of each calendar year and maintained. The control of storage charges by a third party will relieve the local custodian of blame for any loss which may come to his farmer patron, so he should be able to buy grain stored in the leased bins of his house without prejudice as to future business relations.

Deducting Hedge Losses from Income

General Counsel Herman Oliphant of the Treasury Department ruled Nov. 20 that losses from hedging thru purchase or sale of futures on the commodity exchanges may be deducted from "other income" for taxation purposes.

He had been asked whether the losses would constitute "capital losses" under the revenue act of 1934, which provides that losses from sales or exchanges of capital assets shall be allowed only up to \$2,000 plus the gains from such sales of exchanges.

"Futures contracts representing true hedges against price fluctuations in spot goods are not speculative transactions, tho not concurrent with spot transactions.

"Futures contracts which are not hedges against spot transactions are speculative unless they are hedges against concurrent futures for forward sales or purchases."

Sec'y Wallace on Crop Insurance

Speaking at Houston, Tex., Nov. 16, Sec'y of Agriculture H. A. Wallace said of his latest day dream:

"The idea would be to set up all-risk insurance covering a certain percentage of average yields, as figured over a period of years. It would be optional with farmers whether they wished to come into the plan.

"The premiums on a given farm would be based upon the loss experience on that farm as shown over a period of years—together with the loss experience on the county as an adjusting factor.

"I believe there are great possibilities, both for producers and consumers, in the stabilization of supplies thru a system which would store food products in time of plenty to be available in time of want.

"Payment of losses to farmers might be made in commodities or in warehouse receipts; or farmers might be given an option on the given quantity of the stored product due him, which they could liquidate or for which they would receive a check.

"There would be four problems arising from payments in kind, or commodities: 1. Determining loss and premium rates; 2. Collecting and assembling such payments; 3. Storage; 4. Disposition of the stored product; should losses be paid directly out of it or should it be sold and the proceeds distributed in dollars equivalent to the product? If some of the stored product is sold, should there be a policy of replacement by purchases in the market so as to maintain the reserves?"

A Mammoth Pine

on the mountain side, beaten down by the storms, is a source of much usefulness in saving the inhabitants from the wintry blasts. But if it so falls that the woodman cannot find it, no matter what amount of warming wood it may bear, it serves no one, but decays. So with the business or professional man. His capacity to serve may be exceptional, his preparation may be above the average, but unless he lets himself be known, the public will perish, so far as he is concerned.

Asked—Answered

[Readers who fail to find trade information desired should send query for free publication here. The experience of your brother dealers is worth consulting. Replies to queries are solicited.]

Cash Corn Premiums

Grain & Feed Journals: Why do cash corn premiums fail to follow corn futures?—J.R.B.

Ans.: Prices of cash corn are based on offerings of spot corn which command a premium only when stocks are light as at present. When stocks on hand are heavy cash corn prices rise and fall evenly with the futures on account of the carrying charge, as merchants will buy the large offerings of cash corn and sell the future, the cash going into store, and selling at a uniform discount under the future.

Premiums on cash grain compared with futures are merely a reflection of varying present scarcity, while the future reflects the larger quantity that will be available for delivery later, as corn dries out in the crib.

Fourth Section Repeal Will Be Pushed

The Pettengill bill to repeal the long-and-short haul fourth section of the Interstate Commerce Act, which was blocked by the one-man stand of Senator Wheeler in the closing days of the last Senate Session, tho passed by a House vote that exceeded the expectations of its supporters, will be re-introduced soon after opening of the new Congress.

Directors of the Illinois Manufacturers Ass'n have placed themselves on record as favoring the bill in expectation that manufacturers and their employees would be greatly benefited. The bill is also supported by the National Industrial Traffic League and countless other shipper organizations, who appreciate that the long-and-short haul clause prevents the railroads from quoting competitive rates to save their business from the competition of inland waterways and coastwise water-borne traffic.

Co-ordinating Rail Facilities

Already effected are 10 of the 48 projects involving co-ordination of facilities and services of railroads on which studies have been completed, announces J. J. Pelley, pres. Ass'n of American Railroads. Among these approved projects are:

Union Pacific system abandoned 71 miles of its line between Ainsworth and North Junction, Ore., and is making joint use of the parallel line of the Oregon Trunk Railway.

Chicago, Rock Island & Pacific Railway is to abandon its line between Anthony and Ingersoll, Kan., a distance of 33 miles, and will make joint use of the Sante Fe in that territory.

Due to the fact that the New York Central and the Erie Railroad had parallel lines between Batavia and Attica, New York, an agreement was reached whereby the New York Central will abandon its facilities and make joint use of those of the Erie.

Between Albia and Tracy, Ia., a distance of 19½ miles, facilities on the parallel lines of the Wabash Railway and the Chicago, Burlington & Quincy Railroad have been pooled. Under that agreement the Wabash will abandon eleven miles of line and the Burlington will abandon eight miles of line. These two roads will then make joint use of the remaining facilities.

Between Red Wing and Cannon Falls, Minn., the Chicago, Milwaukee, St. Paul & Pacific Railroad is to be abandoned and in its place the Milwaukee and the Chicago Great Western Railroad will make joint use of the latter's line.

Between Eunice and Mamou, La., the Texas & New Orleans Railroad abandoned its line which paralleled that of the Rock Island.

First Illinois Class B License in 65 Years

In 1871 the Illinois legislature enacted a statute effective July 1 that year, but not until November of 1936 was this law invoked as to Class B grain elevators.

Class B License No. 1 has just been issued to the Inland Warehousing Co., of Chicago, to cover its operations at 25 storage points in Illinois.

In the State of Illinois public warehouses of Class B are those located in cities of less than 100,000 inhabitants storing grain in bulk and mixing the grain of different owners. If located in cities having more than 99,999 inhabitants such grain warehouses come under Class A.

No benefits accrued to nor did any disabilities burden the operator of a Class B warehouse, the evident purpose of the drafters of the law of 1871 being to exempt grain warehouses in cities of less than 100,000 from the strict control thought necessary over terminal elevators in the large cities.

In 1936, however, a law, effective July 1, for the first time provided control of Class B warehouses. Now, in Illinois, any country elevator man who keeps in his house grain of different owners in a city of less than 100,000 population automatically makes himself a Class B warehouseman. As such he must apply to the Illinois Commerce Commission for a license to do business under the penalty of \$5,000 fine or 6 months' imprisonment. He must file a bond for not less than \$5,000 or 10c per bushel of storage capacity. He must receive all grain tendered. He must post his storage charges every January, and can not charge more than 1½ cents per bushel for the first 10 days.

The Inland Warehousing Co. leases space, entire buildings or reserved portions, for the storage of grain, cotton or other commodities, in charge of a local custodian, under the Illinois law, and issues negotiable warehouse receipts upon which the banks will make loans on favorable terms.

The president of the company is J. C. Hight, of Decatur, Ill., and vice pres. Robert Bogges of Chicago, where offices are maintained in the Field Bldg. At present the company does warehousing at Pittsfield, Baylis, Hull, New Canton, Rockport, Decatur (2), LaPlace, Burrowsville, Casner, Hammond, Pleasant Plain, Rantoul, Galesville, Springfield, Montezuma, Palestine, Mt. Carmel, West Salem, Olsey, Pana, Morrisonville, Quincy, Osbornville and Chapin, Ill.

New York, N. Y.—October receipts of flaxseed were 502,000 bus., and of millfeed 185 tons, compared with flaxseed 855,200 bus. in October, 1935. October shipments of clover seed were 1,172 bus., compared with 12,344 bus. in October, 1935.

Spokane, Wash.—A meeting of the North Pacific Grain Growers' stockholders on Nov. 16 voted to sign a limited liability note for \$570,000, to be borrowed thru the Farm Credit Administration and turned over to the Farmers National Grain Corp. for C. E. Huff's refinancing program. The vote to support the National financially was 4,531½ to 3,420.

Coming Conventions

Trade conventions are always worth while, as they afford live, progressive grain dealers a chance to meet other merchants from the same industry. You can not afford to pass up these opportunities to cultivate friendly relations and profit by the experience and study of others.

Dec. 1. Farmers National Grain Dealers Ass'n, Chicago, Ill.

Dec. 8, 9, 10. South Dakota Farmers Elvtr. Ass'n, Sioux Falls, S. D.

Jan. 26, 27, 28. Farmers Grain Dealers Ass'n of Iowa, Des Moines, Ia.

Feb. 2, 3, 4. Farmers Grain Dealers Ass'n of North Dakota, Grand Forks, N. D.

Feb. 16, 17, 18. Farmers Elevator Ass'n of Minnesota, Minneapolis, Minn.

Feb. 22, 23. Farmers Grain Dealers Ass'n of Ohio, Toledo, O.

May 10, 11. Illinois Grain Dealers Ass'n, Decatur Ill.

June 21, 22. Ohio Grain, Mill & Feed Dealers Ass'n, Breakers Hotel, Cedar Point, O.

Changes in Chicago Board Rules

The directors of the Chicago Board of Trade Nov. 17 rescinded Regulation 1804a and substituted the following:

Hours for Delivery of Grain thru the Clearing House.—Notice of delivery of grain must be issued and delivered to the Clearing House before 12 o'clock noon on the business day preceding the day of delivery. The Clearing House shall pass such notice to buyers, who must take delivery and make payment before 2:00 p. m. of the business day following.

Under the old regulation acceptance and payment had to be made before 11 a. m. of the following business day.

An amendment to Regulation 1815 also adopted shifts the duties of the Claims and Insolvents Com'te to the Business Conduct Com'te with reference to insolvent members.

Many minor changes in the Rules were approved by the directors for ballot, as follows:

Rule 50, striking out any election of a Nominating Com'te.

Rule 81, making it optional instead of mandatory for the Board to set limits upon fluctuations above or below the average of the preceding day's closing price.

Rule 112, adding registered corporations or partnerships to those entitled to payment out of proceeds of sales of memberships under paragraph third.

Rules 115, 117 and 118 to make them applicable to members who have been adjudged incompetent. These rules relate to disposal of memberships of members who have died.

Rule 223, striking out reference to wire charges on orders for indemnities, no longer dealt in.

Rule 235, striking out the entire rule covering trading in indemnities.

Rule 293, adding a qualification on size of lot deliverable so rule will read:

Variation Allowed.—Deliveries of grain in store may vary not more than 1 per cent from the quantity contracted for, provided, however, that no lot in any one warehouse shall contain less than 1,000 bus. of any one grade, except in the case of oats, where the minimum shall be 2,000 bus.

Rule 295, changing the basis of grades deliverable on contract from Illinois State Inspection Department rules to those promulgated by the Sec'y of the U. S. Dept. of Agriculture, except that when there are no federal rules on a certain grain those of the division of grain inspection of the Department of Agriculture of the State of Illinois shall govern. The state has buckwheat and soybean rules.

Rule 339, striking out of the cash grain rules the reference to "railroad minimum weight," so the new rule will read:

Contents of Car.—Where the subject of the sale is the contents of a car, the entire load

shall constitute a proper delivery, provided it is not less than the "marked capacity of the car."

Rule 609, rescinding the rule entirely. The rule made effective the code of fair competition for grain exchanges, but the Supreme Court declared the NRA, creating codes, unconstitutional.

Altho approved no date has been set for ballot on the foregoing changes.

Switching from old to new contracts in corn for future delivery is being made without extra brokerage and commission, but the directors of the Board have adopted a resolution effective Dec. 1 terminating this privilege, so the customer will pay the commission, the commission firm making the switch paying the floor brokerage.

Grain Judging School at Kansas City

The eighth annual intercollegiate grain judging contest, sponsored by the Kansas City Board of Trade and the Chamber of Commerce, was conducted in the Dwight building, Kansas City, on Nov. 19.

Over 150 classifications of grains, seeds, hay and other field crops were the judging problems of teams from Kansas State College, Oklahoma A. & M. College, University of Nebraska, Iowa State College, Texas Technological College, Texas A. & M. College, Michigan State College, and the University of North Carolina. In charge of the contest was N. C. Helm, University of Missouri.

D. C. Bishop, vice-pres. of the Kansas City

Board of Trade, awarded the gold, silver and bronze medals and cash scholarships to the winners at a dinner following the judging.

Death of H. Lee Early

H. Lee Early, founder of the firm of Early & Daniel, died at his home in Terrace Park, Cincinnati, O., Nov. 17. He was 77 years old and had been in failing health for several years.

The firm of Early & Daniel has actively supported ass'n work thruout its existence. In 1905 Mr. Early was elected pres. of the Cincinnati Chamber of Commerce, and during the course of his long association with Cincinnati grain interests he served the Chamber in a number of capacities. He was one of the early workers for the Receivers & Shippers Ass'n of Cincinnati, which he also served as pres. for a number of years, working diligently for proper adjustment of freight rates and shipping charges, proper provision of facilities for prompt handling of freight traffic, and the elimination of unjust discriminations. Mr. Early's civic pride was again reflected in his promotion of the Cincinnati Associated Organizations, which worked in the industrial and commercial interests of the city.

Mr. Early's first independent operations in the grain business developed at Lawrenceburg, Ind., where he started the firm of Early & Daniel, with L. B. Daniel in 1882, dealing in farm supplies, grain and hay. Seven years later they sold the Lawrenceburg interests and opened in the old Big Four storage

warehouse at Cincinnati. In a short time they had outgrown these facilities, and added an elevator and a hay shed. Soon another addition was needed and the Big Four Elevator, with capacity for 450,000 bus of grain, was leased. The expanding firm had to establish branch offices to supply it with its needs.

Surviving Mr. Early are a daughter, Mrs. George M. Roberts, and two sons, Robert Early, vice pres. of the grain company, and Ellis T. Early, a member of the company's board of directors.

Books Received

SILT MARL 100 PER CENT has been written by E. W. Block, grain dealer at Indianapolis, Ill., to promote the sale of a large and valuable deposit of silt marl and published as an 8-page illustrated pamphlet. Mr. Block clearly shows how the mineral ingredients and finely divided particles of marl make it superior as a soil improver to most manufactured fertilizers.

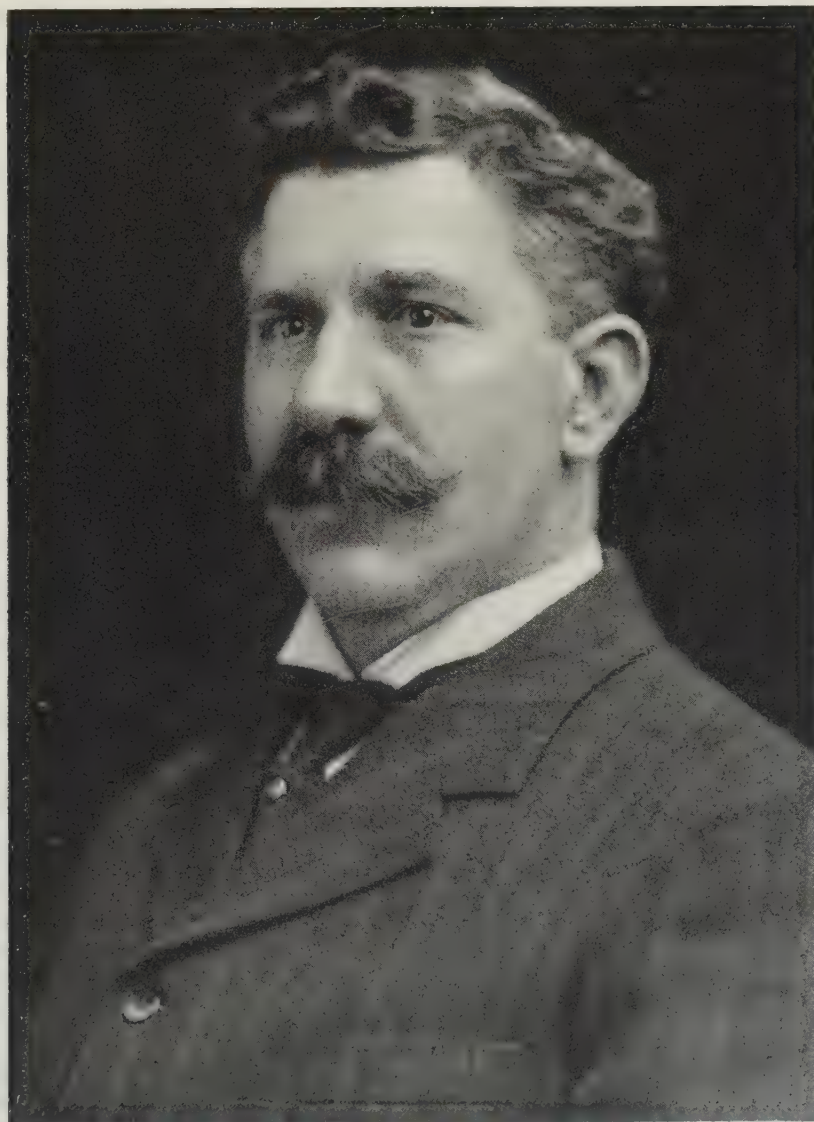
CROP COMMENTS is a very well written brochure describing the cereal plants, their culture, crop enemies and obstacles, giving a monthly farm operations calendar, and embellished by a colored map of the world, the colors indicating the harvest time in different countries by H. C. Donovan, crop expert. Issued by Thomson & McKinnon, Chicago, Ill.

FOUNDATION GUIDE FOR PAYROLL TAXES

By William KixMiller was written for the definite and practical purpose of aiding business men and lawyers to understand and deal with the mass of problems arising under the Federal Social Security Act and the state laws passed pursuant to it. Mr. KixMiller analyzes the legislation of the Social Security program and explains clearly the rights and obligations of those coming within its scope. His book gives an essentially practical treatment to the questions raised by the various acts, but it includes sufficient introductory and historical material on unemployment insurance and old age benefits (with which it is principally concerned) to be helpful in the interpretation of those provisions. While all parts of the program are at least touched upon, the most useful chapters are those on taxation, on the Law of Employment, and on Records and Forms. The chapters on taxation contain a full explanation of the types and amounts of taxes for which businesses will be accountable, and cover both federal and state taxation under the unemployment compensation and old age benefit provisions. A praiseworthy factor in the clarification of the material covered by the book is the frequent and careful use of illustrative cases. 264 Pages. Price, \$3.50. The Foundation Press, Chicago.

BIOCHEMISTRY OF THE AMINO ACIDS.—Scattered fragments of chemical knowledge may be found in the Chemical Abstracts, Beilstein's Handbuch, Richter's Lexicon, Ostwald's Lehrbuch der Allgemeinen Chemie and the chemical dictionaries, but the research worker in the laboratory or the experiment station can hardly afford to take the vast amount of time required to co-ordinate the data. The feed manufacturer's chemist therefore is under heavy obligation to men who have spent years of study and join in a co-ordination of their knowledge in concise readable form as in this volume published under the auspices of the American Chemical Society. Animal nutrition holds no more important topic than the amino acids, which are the building stones of the protein molecule. The book gives the physical and chemical properties of the 19 amino acids and their common derivatives, their determination, their liberation in the intestinal tract, an explanation of metabolism, and the nutritive values of proteins. The authors, H. H. Mitchell, professor of animal nutrition, and his associate in animal nutrition, T. S. Hamilton, of the College of Agriculture, University of Illinois, have surveyed the entire field and set down the findings of research workers whether in agreement or not. Cloth, 619 pages, indexed. Reinhold Publishing Corporation, New York; price \$7.25.

The Farmers National Grain Corporation has filed an amendment to its charter at Salem, Ore., reducing its capital stock from \$1,124,700 to \$12,496.67.



H. Lee Early Cincinnati, O., Deceased.

Letters from the Trade

[The grain dealers' forum for the discussion of grain trade problems, practices and needed reforms or improvements. When you have anything to say of interest to members of the grain trade, send it to the Journals for publication.]

Texas Railroads Meet Truck Competition

Grain & Feed Journals: Since spring the picture on trucks has changed a good deal. The railroads have awakened. Rates in Texas are being changed to meet truck competition and with the small crops they are giving the grain haulers a tight fight. Therefore the truck is not such an important factor as it was a year ago in the Texas business. However, it still occupies an important place in the business, a place that will never be gained back by the railroads. They waited too long to start to meet the situation.

I find that it is necessary to have facilities to handle both truck and rail transportation if one is to do a successful grain business. I also find that to use the truck to its utmost one must provide a place to care for the cargoes and men that arrive in the night and late afternoon after the mill or elevator is closed. To do this the old fashioned "wagon yard" is coming into its own, a place where the truck drivers can park under cover, cook their meal, refresh themselves, leave their cargoes in safety to go "up town" and know that they are welcome to sleep in their trucks or put their cots down in a warm room for the night. The one who provides simple facilities such as these without charge gets the pick of the offerings.—Charles P. Shearn, Jr., Houston, Tex.

Farm Storage Poor for Wheat

Grain & Feed Journals: Regarding the question of storing grain on the farms, I, of course, hope the government will not finance a thing of this kind, but I don't see how anybody can even attempt to substantiate the statement that the terminal market is the only place to store grain. If a man has a storage place on his own farm, and our best farmers do have, they should store it on their own farm then they have it under their own control.

If the corn crop fails after wheat threshing, they will have wheat to feed. Dead sure country elevators are a lot better off to store grain in their own houses, not that they can do it any cheaper or as cheap as in the terminal market, but then they are in a position to ship the grain, north, south, east, or west, and that's a big factor in Indiana. Some times wheat, as this year, will go southwest, other times it will best go to Michigan, the southern states, Ohio, Pennsylvania, New York, but we haven't for years shipped a pound for export.

Trucks are playing hob with a good many conditions. There was a little transfer elevator built in Ohio last year that never shipped a car load into its market, yet handled over a million bushels of wheat and corn that was all hauled to it by trucks. If the government does anything, or finances anybody to build storage, or gives away money to build storage it should be done at country points as near the grain fields as possible, then if farmers need the grain they can get it without freight charges. Farmers can't take care of wheat, but country elevators can. I know this won't sound good to our terminal market friends, but it is such a simple proposition I don't see how anybody can gainsay it, especially in the Central States; 80% of the wheat we handle never sees a terminal market and very little of our corn.—Goodrich Bros. Co., P. E. Goodrich, Pres., Winchester, Ind.

Car of Corn Misrouted

Grain & Feed Journals: I have a miscarriage here that might be interesting to all grain handlers.

I have on track here a car of corn that originated at Rippey, Ia., and should have gone to Forbes Bros., at Topeka, Kan. A car of corn intended for me went to Forbes Bros., and they unloaded my car.

I have the wrong billing on my car, with B/L attached.

The question is who made the mistake?—Ufe Edzards, Hebron, Neb.

Argument has been postponed until Dec. 7 on a preliminary injunction to restrain three Chicago packers from paying the "windfall tax." The suit was brought by two retailers of Louisville, Ky., and is now before Judge Barnes in the federal court at Chicago.

A New Distillery Elevator

Modern construction is followed in the new elevator of the Geo. T. Stagg Distillery at Frankfort, Ky., a unit of the Schenley Products Co., Inc. The grain storage unit consists of 6 bins, 14 ft. in diameter and 78 ft deep. Bin bottoms are entirely of steel, supported directly on the concrete walls.

A full basement makes transfer and elevating machinery easily reached at the bottom. Over the bins is a texas, with spouting to reach the bins. Outside, but attached to the elevator, is a steel encased leg for elevating grain.

Grain cleaning machinery is located in a brick building a few feet from the elevator. In this building structural glass blocks are used to admit light, instead of windows.

The elevator was designed and built by Macdonald Engineering Co.

Two crops of wheat in one season is the claim of Prof. Lysenko, leading Soviet agricultural scientist. Wheat on his 20 acre experimental plot yielded an average of 10 cwt. per acre. The first crop was sown in March and harvested in July. The second crop was sown as soon as the first was off the ground. His experimental achievement is expected to be duplicated in the great wheatfields of the Ukraine and Northern Caucasus regions next year.



Reinforced Concrete Elevator of Geo. T. Stagg Distillery at Frankfort, Ky.

New Federal Taxes for Payrolls

By WILLIAM KIX MILLER in the "Foundation Guide for Payroll Taxes."

The Social Security Act, signed by the President on August 14, 1935, attempts the most comprehensive social reforms ever undertaken by the government of the United States through direct legislation. The law is in substance in three parts; one part has to do with unemployment compensation, another part with old-age benefits, and the third with grants to states to take care of want, on a needs basis. The first two objectives differ from the third in that they are based substantially on insurance principles, that is, they are expected to pay their own way. This far-reaching program is a tremendous effort in social and economic welfare work; it places this country in the front rank with the other industrial nations of the world, in their programs of amelioration of want. Granted its value as an institution, the immediate concern of most individuals lies in its direct effect on their persons, their properties, and their future. For this reason, we outline briefly the provisions of the Social Security Act.

Taxes. The Act creates three taxes, two of which are levied on employers, while the third falls on employees. These taxes are summarized as follows:

(1) An excise tax on the total payroll of employers of eight or more persons, subject to a maximum credit of 90 per cent allowed in those states in which an unemployment compensation law is enacted in conformity with the standards of the Federal Social Security Act.

(2) An excise tax on the payroll of all employers, excluding all remuneration paid by an employer to any individual in his employ which exceeds \$3,000.

(3) An income tax on the wages of employees, excluding all remuneration received by an individual over \$3,000 per year from any one employer.

The proceeds of these taxes will be used in furtherance of the unemployment compensation and old-age annuity programs established by the Social Security Act.

These taxes are graduated upward over a period of thirteen years. The following table shows how the rates increase from year to year:

RATE OF TAXES UNDER THE SOCIAL SECURITY ACT				
Calendar Year	Unemployment compensation (disregarding credit allowances)	Old-Age Annuity		Total
	Employer Per cent	Employer Per cent	Employee Per cent	
1936.....	1	1	1	1
1937.....	2	1	1	4
1938.....	3	1	1	5
1939.....	3	1	1	5
1940.....	3	1½	1½	6
1941.....	3	1½	1½	6
1942.....	3	1½	1½	6
1943.....	3	2	2	7
1944.....	3	2	2	7
1945.....	3	2½	2½	8
1946.....	3	2½	2½	8
1947.....	3	2½	2½	8
1948.....	3	2½	2½	8
1949 (and thereafter).....	3	3	3	9

The Act specifies those classes of employment which are excluded from the tax, and of course from the benefits. Following are the classes of individuals not included for the unemployment tax and the old-age annuity tax:

EXCLUSIONS

Old-Age Annuity Tax

- (1) Agricultural labor;
- (2) Domestic service in a private home;
- (3) Casual labor not in the course of the employer's trade or business;
- (4) Service performed by an individual who has attained the age of 65.

Unemployment Compensation Tax

- (1) Agricultural labor;
- (2) Domestic service in a private home;

- (4) Service performed by an individual in the employ of his son, daughter, or spouse, and service performed by a child under the age of 21 in the employ of his father or mother;
- (5) Service performed in the employ of the United States Government or of an instrumentality of the United States;
- (6) Service performed in the employ of a state, a political subdivision thereof, or an instrumentality of one or more states or political subdivisions;
- (7) Service performed in the employ of a corporation, community chest, fund, or foundation, organized and operated exclusively for religious, charitable, scientific, literary, or educational purposes, or for the prevention of cruelty to children or animals, no part of the net earnings of which inures to the benefit of any private shareholder or individual.

Those mentioned in paragraphs 5, 6 and 7 are also excluded from the old-age annuity tax.

Plan of Federal Unemployment Tax. By the passage of the Social Security Act the federal government has created a system encouraging the states to establish unemployment compensation laws. This plan works by means of credit allowances. A credit against the federal tax is allowed to employers in any state which enacts an unemployment compensation act in conformity with federal standards. If the state does not enact such measures for unemployment compensation, the amount collected by the federal government will go into the general treasury of the United States for general governmental purposes. It is evident, therefore, that taxes collected under the federal unemployment compensation law will never be appropriated for unemployment benefits.

This federal legislation was framed with the thought that the attack upon the problems of unemployment insecurity should be a cooperative venture participated in by both the federal and state governments, preserving the benefits of local administration and national leadership. It was thought unwise to have the federal government decide all questions of policy and dictate completely what the states should do. Only very necessary minimum standards are included in the federal measure, leaving wide latitude to the states.

While the different state unemployment insurance compensation laws must make all contributions compulsory, the states, in addition to deciding how these contributions shall be levied, have freedom in determining their own waiting periods, benefit rates, maximum benefit periods, and the like.

It is obvious that in the best interests of the worker, industry, and society, there must be a certain uniformity of standards. It is obvious, too, that the penalizing of competitive industries in any state as against those in another state must be prevented. The federal tax does prevent this inequality, as it costs the employer the same whether he pays the levy to the federal government or makes a contribution to a state unemployment insurance fund. If he pays the state tax, he need not pay the entire federal tax. This is known as the credit system.

Unemployment Benefits. Only those individuals qualify for benefits whose wages have been taxed by the state. If such employees lose their positions, they will receive compensation from the state for a specified number of weeks while they are out of work. It is important to note that no benefits are paid by the federal government. The amount of the payments and the number of weeks during which such payments are made depends on the provisions of the particular state law. The benefits will probably amount to one-half of the employee's wages, subject to an absolute maximum and minimum, and will be paid over a period of approximately ten to eighteen weeks.

Old-Age Benefits—Annuities. The old-age annuity plan is purely a federal project. For its support there is levied an income tax on the employee, and an excise tax on the employer, starting at one per cent on each, beginning in 1937, and increasing one-half of 1 per cent each 3 years thereafter until the total of 3 per cent each is paid by the employer and the employee. An annuity will be payable to all employees subject to this tax. Such an individual, however, before qualifying for the annuity, must have reached the age of 65; his total wages received after Dec. 31, 1936, and before reaching 65 must not be less than \$2,000; and his wages must be paid to him on some day in each of 5 years after Dec. 31, 1936, and before he is 65 years old.

The first monthly payment to a qualified individual will be made on Jan. 1, 1942, and its amount will be calculated as follows:

Total wages received after Dec. 31, 1936, and prior to age 65, in covered employments (not counting wages in excess of \$3,000 annually)	Per cent of total wages paid as monthly benefit
First \$ 3,000	¼ per cent
Next 42,000	1/12 per cent
All over 45,000	1/24 per cent

Those individuals who do not fulfill the above requirements will not qualify for any benefits, and upon reaching the age of 65 are paid a lump sum equal to 3½ per cent of the total wages paid after Dec. 31, 1936, and before the attainment of age 65. Upon the death of an individual before he reaches the age of 65, his estate receives payment equal to 3½ per cent of his total wages received after Dec. 31, 1936; if he dies after reaching that age, his estate receives the same amount less any benefits paid him during his lifetime. Payments of benefits are, however, withheld for each month in which a qualified individual who has attained age 65 received wages for regular employment. In the event that an individual retires before attaining the age of 65, the benefit does not become payable until the age 65 is reached.

These old-age benefits in the form of monthly payments are to be paid to employees who have worked and contributed (along with the employers) to the annuity fund substantially in direct proportion to the total wages earned by such individuals in the course of their employment subsequent to 1936. The minimum monthly payment is to be \$10, the maximum \$85. Benefit payments are made for life after the retirement age of 65 is reached.

Federal Welfare Grants to States. These grants have nothing to do with the unemployment compensation sections, nor with the old-age annuities part of the Social Security Act. The federal government has appropriated approximately \$95,000,000 for the fiscal year 1936, to be allotted among the several states in order to aid them in carrying out the provisions of their laws for the aged and blind people, and dependent and crippled children, as well as for maternal and child health, child welfare, and public health. In general, the states, before qualifying for such financial assistance, are required to fulfill certain specified conditions which are designed to facilitate the administration of their laws and the achievement of the social purposes they embody. The states must also participate financially in this scheme by appropriating certain sums from their treasury to supplement the federal funds.

The old-age assistance or pension is distinguishable from the old-age annuity discussed above since it is not based on a tax nor an actuarial plan of benefits. The old-age grant program is a charitable system to be administered by the states under federal supervision. The sole basis for distribution of these benefits is need; they may be used to supplement the annuity when the latter is considered insufficient.

Under the state old-age assistance laws, those individuals who qualify will receive a monthly payment. To qualify, the applicant must have

[Concluded on page 430.]

Crop Reports

Reports on the acreage, condition and yield of grain and field seeds are always welcome.

Dixon, Ky.—Half the cultivated land in Webster County is growing a clover crop, said to be the largest acreage in the history of the county.—W. B. C.

Boonville, Ind.—Growing wheat in Warrick and adjoining counties is looking exceptionally fine for this season of the year. Much corn that was cut by the farmers and shocked, is still standing in the fields.—W. B. C.

Levant, Kan., Nov. 11.—Large acreage of wheat in the ground but plant is small, mostly sown in October. Ample moisture for some time. Best prospects we have had at this time of year for three years.—Shannon Grain Co., G. W. Query.

Winona, Minn., Nov. 11.—We had a fairly good crop of everything in southeastern Minnesota, and with good prices farmers are feeling fine. Several farms have changed hands in the last 60 days at \$10 to \$15 an acre over a year ago.—Northern Field Seed Co.

Pretty Prairie, Kan., Nov. 23.—On account of dry weather the wheat was sowed late and is very small. The fields are dry and very hard on top. There will be very little pasture. Very little roughage here. No corn at all.—S. E. Young, mgr., Collingwood Grain Co. No. 1.

Lahoma, Okla., Nov. 12.—Prospects for winter wheat good, plenty of subsoil moisture at present. Some fields sown rather late. About same amount of acreage sown as last year. Nor much fall and winter pasture on wheat except volunteer oats left.—Farmers Elevator Co.

Topeka, Kan., Nov. 10.—The supply of soil moisture over most of the eastern two-thirds of the state is sufficient to carry wheat well into the winter. There is a fair reserve of subsoil moisture throughout this area except in a few north-central counties. A general deficiency of subsoil moisture (except in summer fallowed fields) exists over most of western Kansas.—U. S. Dept. of Ag. and Kansas State Board of Ag.

Kansas City, Kan.—Average protein of 749 cars of wheat tested during October by the Kansas City office of the Kansas grain inspection department was 14.34%, and 591 cars tested by Missouri averaged 13.65%. A near record high average for the market on this season's inspection is indicated by the average of 13.72% protein on 23,617 cars tested by both the Missouri and Kansas departments in the first four months of the crop year.

Decatur, Ill., Nov. 14.—Illinois soybean yield is estimated at 16 bus. per acre, and indicated production is 17,600,000 bus., against 21,834,000 bus. a year ago. Favorable weather for full maturity of later beans has been offset by a more-than-usual loss from pods cracking open and shelling of beans in the field. Damage to pods from grasshoppers and from wet weather has resulted in varying quality, especially in the central and west-central section of the state.—Baldwin Elevator Co.

Oakley, Kan., Nov. 15.—Week-end drive Dodge City to Amarillo, Tex., via Spearman, surface moisture becoming dangerously dry for four inches down. Then Amarillo to Garden City, Kan., via Guymon, rain urgently needed because of dry surface with but little moisture below. Some plants already dead and some seed not yet sprouted. Sub-moisture shortage promising danger on trip up to that point, then Garden City to here conditions better even to some extent to submoisture.—H. C. Donovan, statistician, Thomson & McKinnon.

Winchester, Ind., Nov. 21.—For some reason or other the late sown wheat is not doing as well as we thought. There was quite a little corn so late and down badly, that farmers waited until the corn matured, cut it up and sowed their wheat later. Some of it is just now coming up, barely thru the ground. What will become of this it is hard to tell. If we have good weather for the next couple of weeks or a warm snow, it will grow. Early sown wheat is plenty high enough, some farmers are fearful

it is a little too high. Inclined to believe the corn crop in Indiana is larger than was estimated. We are having quite a few calls for slat corn cribs, that certainly means the farmers have their cribs full of old or new corn and are buying extra equipment to store their surplus corn. Corn has lost some of its moisture in the last ten days. Average corn is coming now with about 20% moisture.—Goodrich Bros. Co., P. E. Goodrich, Pres.

Winchester, Ind., Nov. 14.—Corn we are getting now is carrying around 22% moisture, some of it as high as 25% and an occasional load as low as 19%. We are having daily complaints of the early shucked corn spoiling. One of our elevators had to shell and ship out the corn he bot that was gathered in October, because it was heating. We are buying some wheat right along and an occasional car of oats. Growing wheat never looked better, it is just perfect, not a spot in the field but what the ground is covered. The late sown wheat is up and within another week will have the ground thoroly covered. Farmers say wheat is rooting deep. Ground is in perfect condition and conditions so far point to the largest wheat crop Indiana has raised in several years as we have a large acreage; so much grass was burned out last summer it was necessary to sow wheat to get a stand of clover.—Goodrich Bros. Co., P. E. Goodrich, pres.

Decatur, Ill., Nov. 21.—Winter wheat was sown a little later than usual, although under favorable conditions. Some wheat fields are backward because of late seeding and should have more fall growth to insure against winter damaging weather. Otherwise there is plenty of moisture and the present prospect is above average. In some localities corn husking has been practically completed and another week will wind it up. This work is farther along than usual due to the early start and the extremely light crop in much of the southern and west-central areas. Moisture is improving, quality generally good. A large and steady truck movement continues into southern Iowa and Missouri. Continued favorable weather has enabled farmers in harvesting their soy beans and this work is now rapidly being completed. Reports continue to show uneven yields and a wide variation in quality. Arrivals now show improvement in moisture. Country offerings are very light.—Baldwin Elevator Co.

Kansas City, Mo., Nov. 12.—The months of September and October provided sufficient moisture over the entire state to permit the fall seeded area a good start and a consequently good fall growth. Except for the western fourth of the state, conditions at this date, according to our reports, are considered quite promising; but in the extreme west the seeding was done at a later date and a smaller plant growth has resulted. The central section appears good and a considerable portion, both in the central and eastern sections, has afforded pasture up until recent freezing weather. In September we stated that in our opinion the possible maximum seeded acreage would be 16,250,000. With seeding completed, we have checked carefully and find a considerable area in the western fourth of the state, south of the Rock Island railroad through Colby, where, for various reasons, such as lack of money for seeding, lack of seed, insufficient moisture supply and actually a lack of farmers, the acreage has been considerably restricted, and it is this area that usually plants the surplus acreage. The central and eastern portions of the state have had an increase in acreage, but it is our opinion that the total seeded area in Kansas does not exceed 15,100,000 acres.—H. L. Robinson.

Commodity Act Attacked by Kansas City Board

The Kansas City Board of Trade filed a brief Nov. 14 with the Supreme Court of the United States in its suit to enjoin enforcement of the various provisions of the Commodity Exchange Act and its criminal and penal provisions for failure to comply with its requirements, on the ground that the penalties are so harsh that petitioners are precluded from testing the validity of the regulatory provisions by refusing performance, and to secure a declaratory judgment as to the validity of the act and its respective provisions.

Robinson-Patman Violations

Complaints alleging illegal price discrimination in the sale of yeast have been brought against Standard Brands, Inc. (Fleischmann) and its subsidiary, Standard Brands of California, New York City, under section 2(a) of the Robinson-Patman Act.

Discrimination in price for bakers' yeast is alleged because the scale of sale prices range from 14c per pound to users of 50,000 or more pounds of yeast per month up to 25c a pound to users taking only from 1 to 150 pounds per month.

Northwestern Rainfall Deficient

Heavy winter snowfall or good spring rains will be required to remedy the deficiency in moisture in the Northwest.

From Apr. 1 to Oct. 1 Minnesota received 11.42 ins. of rain, against a normal of 18.55; North Dakota 5.78, against 13.11; South Dakota 7.22, against 14.40; Montana 6.34, against a normal of 9.74 ins.

In 1935 Minnesota and North Dakota had more than normal, 19.19 and 14.77 respectively.

Reports from Bismarck, N. D., are that 1936 was the driest in the 44 years that weather statistics have been kept in the state. On account of dust storm street lights had to be turned on at noon Nov. 19 at Crookston, Minn.

Production of Minor Crops

Washington, D. C.—The U. S. Dept. of Agriculture on Nov. 10 reported the production of minor crops as follows:

State	SOYBEANS (FOR GRAIN) Production		
	Avg. 1928-32	1935	Preliminary 1936
Ohio	423	880	852
Indiana	1,925	5,899	3,213
Illinois	4,926	21,834	17,600
Iowa	670	6,800	2,300
Missouri	1,030	1,046	483
North Carolina ..	1,230	1,232	1,606
6 States	10,204	37,691	26,054

State	BUCKWHEAT Production		
	Yield (per Acre, Bus.)	Avg. 1928-32	Preliminary 1935 1936
Me.	1935 1936	207	160 187
N. Y.	17.0 17.5	2,692	2,380 2,082
Pa.	19.5 19.5	2,576	2,847 2,418
Ohio	20.0 16.0	410	420 258
Ind.	14.0 13.0	191	280 104
Mich.	14.0 11.5	288	378 218
Wis.	11.0 10.0	197	176 160
Minn.	8.5 8.0	479	170 160
Iowa	14.0 9.0	58	168 90
Md.	21.0 17.0	120	126 68
Va.	13.0 14.0	171	195 196
W. Va.	17.0 14.5	359	340 246
U. S.	16.6 16.2	8,277	8,220 6,456

State	FLAXSEED Production		
	Yield (per Acre, Bus.)	Avg. 1928-32	Preliminary 1935 1936
Minn.	9.5 5.0	6,040	6,432 3,895
Iowa	9.5 8.0	178	171 128
N. Dak.	5.5 1.2	5,944	5,126 839
S. Dak.	5.0 1.5	2,170	950 88
Kans.	6.0 4.5	241	348 198
Mont.	4.2 2.0	1,149	319 70
Calif.	15.0 17.0	....	570 731
U. S.	7.0 3.6	15,996	14,123 6,081

State	GRAIN SORGHUMS Production		
	Yield (per Acre, Bus.)	Avg. 1928-32	Preliminary 1935 1936
Mo.	8.5 5.0	1,786	2,346 855
Nebr.	7.5 5.5	268	2,678 748
Kans.	5.5 3.5	15,987	9,680 5,852
Okla.	8.0 5.0	14,050	13,160 33,820
Tex.	13.5 9.5	55,091	60,075 33,820
N. Mex.	8.0 7.0	4,338	2,816 2,625
Ariz.	27.0 29.0	784	1,134 1,160
Calif.	31.5 32.0	2,276	4,064 3,296
U. S.	10.5 7.4	97,760	97,823 58,103

State	BEANS, Dry, Edible Production		
	Pounds	Thousand bags of 100 lbs.	Thousand bags of 100 lbs.
N. Y.	780	600	851 648
Mich.	890	450	3,244 4,806 2,286
Nebr.	650	900	64 104 126
Mont.	1,080	960	380 551 269
Idaho	1,020	1,200	1,566 1,306 1,464
Wyo.	1,050	1,220	296 410 476
Colo.	270	260	1,279 1,256 1,017
N. Mex.	275	190	605 302 262
Calif.	1,170	1,167	3,348 3,966 4,002
U. S.	748.7	621.0	11,858 13,799 10,755

Grain Movement

Reports on the movement of grain from farm to country elevator and movement from interior points are always welcome.

Duluth, Minn.—A large oat cargo, 417,500 bus., was recently loaded out and delivered to Toledo, O. Car shipping holds steady and in heavy volume, but not up to the peak set during the month of October.—F. G. C.

New Orleans, La.—Grain loaded on vessels at this port during October was as follows: Wheat 1,200 bus., corn 178, oats 3,468, compared with wheat 10,874 bus., corn 383, oats 36,091, in October, 1935.—New Orleans Board of Trade.

San Francisco, Cal.—October receipts of grain were: Wheat 3,320 tons, barley 15,777, oats 680, corn 640, beans 33,500 sacks, compared with wheat 16,611 tons, barley 22,465, oats 150, corn 240, beans 40,300 sacks, in October, 1935.—James J. Sullivan, chief inspector, Grain Trade Ass'n.

New York, N. Y.—October receipts of grain were: Wheat 1,938,730 bus., corn 612,685, oats 90,175, rye 8,500, barley 10,400, compared with wheat 2,942,317 bus., corn 650,958, oats 408,237, rye 1,700, barley 20,085 in October, 1935. Shipments during the same period were: Wheat 982,000 bus., compared with 1,877,000 bus. in October, 1935.—Dept. of Information Statistics, Produce Exchange.

New Orleans, La.—October receipts of grain were: Wheat 2,800 bus., corn 251,322 bus., oats 7,958, rye 2,796, compared with wheat 19,876 bus., corn 13,065, oats 23,430, in October, 1935. Shipments during the same period were: Wheat 4,000 bus., corn 105,178, oats 15,468, rye 1,500, compared with wheat 12,274 bus., corn 76,888, oats 48,091, in October, 1935.—J. M. Wilkie, chief inspector, Board of Trade.

Peoria, Ill.—Receipts of grain in October were: Wheat 51,900 bus., corn 1,257,700, oats 96,000, rye 10,800, barley 39,900, compared with wheat 99,400 bus., corn 1,943,100, oats 204,200, rye 199,200, barley 250,600, in October, 1935. Shipments during the same period were: Wheat 94,800 bus., corn 429,800, oats 92,000, rye 10,800, barley 233,800, compared with wheat 182,100 bus., corn 917,200, oats 228,500, rye 36,000, barley 86,800, in October, 1935.—John R. Lofgren, sec'y Board of Trade.

Indianapolis, Ind.—October receipts of grain were: Wheat 202,000 bus., corn 1,036,500, oats 318,000, rye 123,000, compared with wheat 441,000 bus., corn 993,000, oats 502,000, rye 89,000, in October, 1935. Shipments during the same period were: Wheat 214,000 bus., corn 865,500, oats 290,000, rye 114,000, compared with wheat 235,000 bus., corn 606,000, oats 222,000, rye 75,000, in October, 1935.—W. H. Howard, sec'y Board of Trade.

Ft. William, Ont., Nov. 10.—October receipts of grain were: Wheat 6,183,309 bus., oats 150,007, barley 23,220, flaxseed 287, rye 1,614, compared with wheat 7,344,939 bus., oats 162,950, barley 6,420, rye 1,085, in October, 1935. Shipments during the same period were: Wheat 3,813,584 bus., oats 190,571, barley 18,456, flaxseed 832, rye 16,331, compared with wheat 3,623,498 bus., oats 83,308, barley 7,061, in October, 1935.—E. A. Ursell, Dominion Statistician.

Kansas City, Mo., Nov. 12.—During the past month there has been a slight increase in the farm movement, but this small run seems over at this time, and after allowing for seed requirements and feeding up to this date, our idea of farm stocks at this time is about 15,000,000 bus., which means a very light run of wheat for the balance of this crop year, and feeding of wheat we believe will continue with the corn price at its present level.—H. L. Robinson.

St. Louis, Mo.—October receipts of grain were: Wheat 909,000 bus., corn 742,500, oats 268,000, rye 25,500, barley 358,400, compared with wheat 1,174,000 bus., corn 699,500, oats 408,000, rye 27,000, barley 258,000, in October, 1935. Shipments during the same period were: Wheat 610,382 bus., corn 195,248, oats 270,660, rye 47,000, barley 65,600, compared with wheat 1,073,600 bus., corn 174,100, oats 272,000, rye 25,900, barley 40,300, in October, 1935.—W. J. Krings, Merchants Exchange.

Duluth, Minn.—Since June this year up to Nov. 20, imports of Canadian grain by lake have reached 19,128,000 bus. and the season has several weeks more to run before the close. Receipts are likely to exceed the twenty million mark. Receipts of Polish barley were 291,000 bus.; Argentine flax, 119,000 bus.; corn 50,000 bus. Winter wheat brot in from eastern U. S. lake ports, reached 817,000 bus.—F. G. C.

Ottawa, Ont., Nov. 19.—Canadian visible supply of wheat, including 8,399,502 bus. in rail transit, was reported as 142,576,787 bus., compared with the revised figure of 148,226,026 bus. for the previous week. The wheat stocks in the elevators in Canada for the week ending Nov. 13 amounted to 118,698,438 bus. compared with 125,646,869 bus. for the previous week and 234,980,221 bus. for the corresponding week a year ago. Wheat marketings in the Prairie Provinces for the week ending Nov. 6, amounted to 2,923,530 bus., a decrease of 489,476 bus. from the previous week, when 3,413,006 bus. were marketed. During the corresponding week a year ago, the receipts were 4,886,606 bus.—R. H. Coats, Dominion Statistician.

World Wheat Supplies Reduced

Crop conditions now indicate that the world wheat crop will be about 3,462,000,000 bus., a decrease of about 90,000,000 bus. compared with last year, the Bureau of Agricultural Economics stated recently in a summary of world wheat prospects.

Taking account of the carry-over of old wheat as well as the new crop, it appears that the total world supplies of wheat for 1936-37 will be about 265,000,000 bus. less than last year. Russia and China are excluded from these totals. Exports from Russia appear unlikely.

The reduced supplies are the result of a very short crop in North America and North Africa and a general reduction in stocks in nearly all countries. The smaller world supplies of wheat have led to substantially higher prices.

It is estimated that world shipments of wheat during 1936-37 will be in the neighborhood of 555,000,000 bus. This would compare with actual shipments of 489,000,000 bus. from July thru June in 1935-36. Smaller crops and stocks in the importing countries, together with improving economic conditions and especially the recent devaluation of currencies and the reduction in import duties within the gold bloc countries, all suggest larger buying of wheat. It is expected, however, that most of the increase in European needs will be supplied by the Danube countries which produced very large surpluses. Oriental imports are expected to be smaller this season.

Agricultural Imports

India was added to the list of countries from which the United States is importing agricultural products when the steamer Wellandoc finished unloading 93,765 bus. of flaxseed at the Calumet elevator of Rosenbaum Brothers, Chicago, on Nov. 16.

Originally shipped from Bombay, India, the cargo was transferred to a lake boat at Montreal for the remainder of its journey. This was the first Indian flaxseed to be received at Chicago.

On Nov. 12 Chicago received another cargo of Argentine corn, 122,000 bus., moving from Montreal by lake boat.

The Bureau of Agricultural Economics reports imports for consumption of agricultural products during the July-September period included 3,506,000 bus. of barley, 85,752,000 lbs. of barley malt, 6,994,000 bus. of corn, 15,000 bus. of oats, 2,035,000 bus. of rye, 2,600,000 bus. of flaxseed, and 29,124,000 lbs. of rice.

These figures compare with 380,000 bus. of barley, 96,743,000 lbs. of barley malt, 17,189,000 bus. of corn, 38,000 bus. of oats, 1,886,000 bus. of rye, 4,691,000 bus. flaxseed, and 4,145,000 lbs. of rice during the same period a year ago.

Wheat imports during the July-September period totaled 18,654,000 bus., compared with 9,466,000 bus. during the same period a year ago.

Imports of wheat for domestic consumption have more than doubled during the nine-month period, January-September, this year as compared with last, the total reported by the Bureau being 28,893,000 bus. which paid the full duty of 42c per bu., or the ad valorem rate of 10 per cent applicable to feed grain. This compares with 13,446,000 bus. during the same period last year.

The Bureau's figures on other imports for the January-September period this year, followed by the figures, in parenthesis, for the same period in 1935, are: Corn, 12,656,000 bus. (34,809,000); oats, 60,000 bus. (10,092,000); rye, 2,188,000 bus. (9,437,000); barley malt, 207,847,000 lbs. (269,072,000); flaxseed, 9,423,000 bus. (13,686,000).

Three Kentucky milling firms asked the Court of Claims at Washington, Nov. 12, to allow returns totaling \$79,912 for processing and floor taxes paid before invalidation of sections of the Agricultural Adjustment Act by the Supreme Court. The Owensboro Milling Co., Owensboro, sought return of \$49,059; the Marion Milling Co., of Marion, \$17,351, and the Lewisport Milling Co., Lewisport, \$13,500.

Daily Closing Prices

The daily closing prices for wheat, corn, oats, rye, barley and soybeans for May delivery at the following markets for the past 2 weeks have been as follows:

	Wheat													
	Option	Nov. 12	Nov. 13	Nov. 14	Nov. 16	Nov. 17	Nov. 18	Nov. 19	Nov. 20	Nov. 21	Nov. 23	Nov. 24		
Chicago	116½	104½	113	113½	114½	115½	115½	115	114½	115½	115½	115½	115½	115½
Winnipeg	113½	95½	106½	106½	107½	107½	108	108½	107½	108	107½	107	107½	107½
Liverpool*			111½	111½	112½	111½	112½	114½	113½	112½	113½	113½	112½	112½
Kansas City	115½	102½	109½	110	110½	111½	111½	111½	110½	111½	111½	111½	111½	111½
Minneapolis	126½	115½	123½	123½	124½	125½	125½	125½	124½	125½	125½	125½	125½	125½
Duluth, durum	133½	120	128	129½	129½	131	129½	128	127½	128	128	127½	127½	126½
Milwaukee	116½	98½	113½	113½	114½	115½	115½	114½	114½	115½	115½	115½	115½	115½
Corn														
Chicago†	101	85½	95½	95½	95½	97	99	98½	98½	99½	99½	99½	99½	99½
Kansas City	102	89½	97½	97½	97½	98½	100½	100	99½	100½	100½	100½	100½	100½
Milwaukee	99½	88	95½	95½	95½	96½	98½	97½	97½	98½	98½	98½	98½	98½
Oats														
Chicago	48½	38½	43	43	43½	43½	44½	44½	41	44½	44½	44½	44½	44½
Winnipeg	48½	42½	44½	44½	45½	45½	45½	46	45½	45½	45½	45½	45½	45½
Minneapolis	45½	39	42	42	42½	42½	43½	43½	43	43½	43½	43½	43½	43½
Milwaukee	48	40½	43	43½	43½	43½	44½	44½	44	44½	44½	44½	44½	44½
Rye														
Chicago	91½	75½	83½	84½	86½	89	90½	90½	88½	90½	90½	91½	91½	91½
Minneapolis	87½	73½	81½	82½	83½	86	86½	87	85½	87½	87½	87½	87½	87½
Winnipeg	79½	62½	71	71½	72½	75½	76½	78½	76½	78	78½	78½	79½	79½
Duluth	87	76½	81	82	83	86	86	87	86	86½	86½	86½	86½	87
Barley														
Minneapolis	74½	60½	71½	71½	73½	73½	73½	73½	73½	73½	73½	73½	73½	72½
Winnipeg	61½	50½	57½	57½	57½	58½	59½	60	59½	59½	59½	59½	59½	59½
Soybeans														
Chicago	134½	120½	126½	126½	126½	130½	134½	131	131½	134	133½	133	132½	132½

*At daily current rate of exchange. †New style.

Estimating Quantities of Grain for Warehouse Accounting

By Frederic C. Dobson

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CHAPTER IV—METHOD OF DETERMINING RATE OF PACKING EFFECT

In preceding chapters the writer has reviewed several studies in packing effect and settling, selected, because of their representative nature, from his records of practical experiments, involving millions of bushels of different grains. Analysis of data obtained from these experiments, when correlated with studies more in the nature of "laboratory" experiments, has resulted in the perfection of a method, by application of which the packing effect may be accurately determined in any grain of any test weight in bins of any shape, size, depth, or material of construction.

Because of the more complex relationships found to exist between the test weights of grain and the rates of packing effect, and between the hydraulic radii of bins and the rates of packing effect, these relationships were selected as a "base" upon which the method could be most satisfactorily developed. From analysis of the data obtained from one series of practical experiments involving grain of different test weights stored in circular, concrete bins, 100 ft. deep and 22 ft. in diameter, curves have been plotted illustrating graphically the "test weight—packing effect" relationship in corn and in the four small common grains considered collectively, when stored in bins of this size and depth. Analy-

sis of data obtained from other series of practical experiments, involving grain stored in concrete bins of the same depth but of various sizes and shapes, grouped according to their hydraulic radii, has provided additional curves illustrating this same relationship in grain stored in bins of different sizes. Comparison of various curves illustrates the "hydraulic radius—packing effect" relationship.

A.—USE OF CHART TO DETERMINE RATES: In the chart herewith, the curves are designated by figures which represent the hydraulic radii of bins to which they apply. The curves shown in dotted lines, ranging from 50 pounds to 60 pounds per bushel, apply to corn only, while the longer curves, shown in solid lines, are to be used for any of the four, small, common grains. The vertical column of figures at the left represent test weight, in pounds per bushel, and the figures below represent rates of P.E., in terms of percent of actual volume—upper portion for corn only and lower portion for all other common grains. The chart can be used directly to determine the rate of P.E. in any grain of any test weight, stored in any concrete bin, 100 ft. deep, in the following manner:

Determine the hydraulic radius of the bin in question and the average test weight of the grain it contains. Locate the position of this test weight at the left side of the chart and

follow the closest horizontal line, to the right, to its intersection with that curve which represents a hydraulic radius approximately equal to that determined for the bin in question. Project this intersection, vertically, and the percentage shown will be the rate of P.E. applicable to the problem.

B.—ADJUSTMENT FOR DIFFERENT MATERIALS OF CONSTRUCTION: As rates of packing effect in grain of one test weight, stored in bins of one size and depth, vary according to the material of which the bins are constructed, an adjustment must be made to provide for this variation. It has been shown under "G'", in chapter III, that the unit pressures in bins of one size and shape vary directly with variations in the compensated diameters, D' , of these bins, and that D' is determined by the ratio

$$\frac{D}{4 \times k \times u} \text{ or } \frac{D}{N}$$

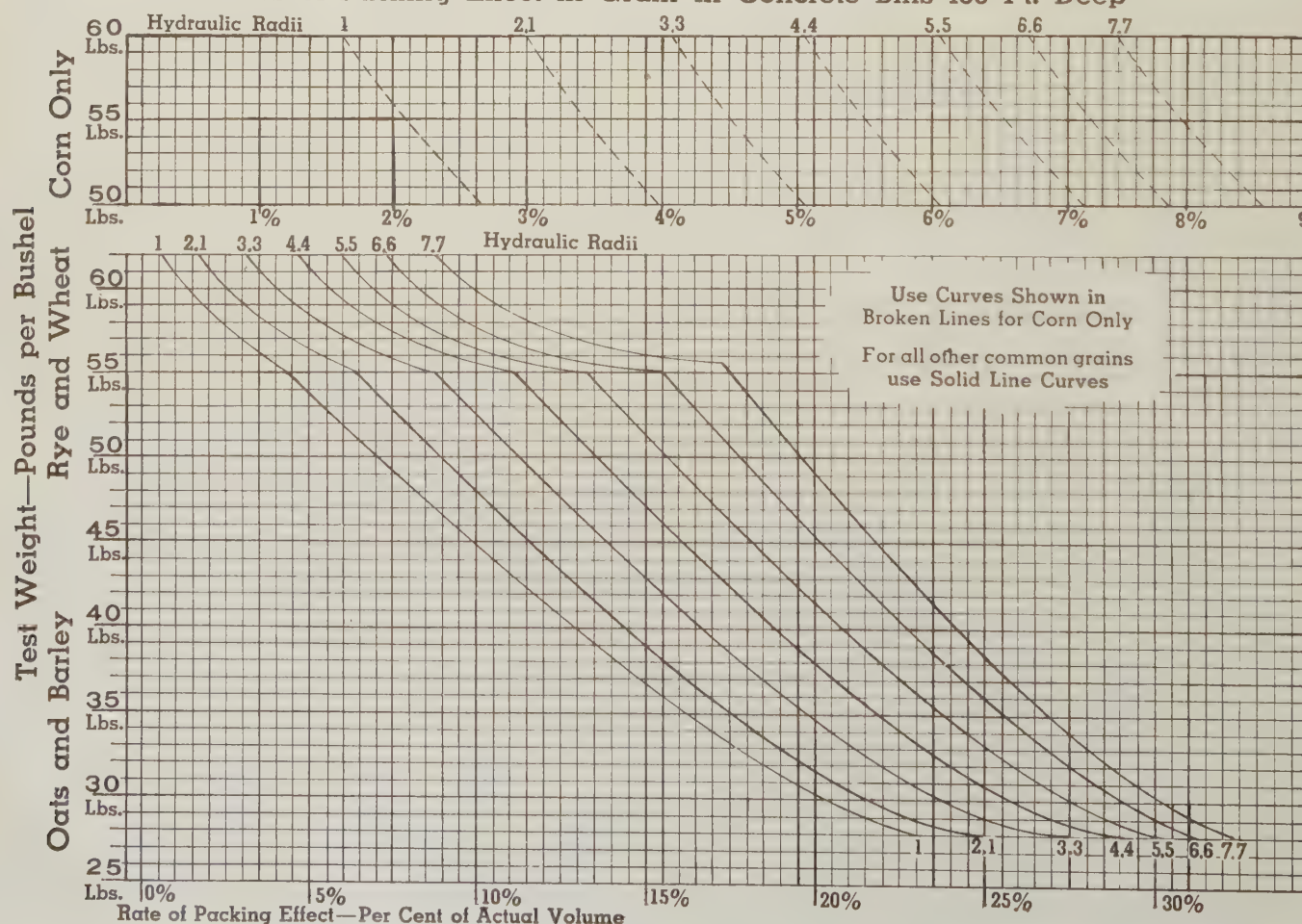
In bins of one size and depth, the rates of P.E. vary directly with variations in the unit pressures, therefore the rates of P.E. vary directly with variations in the compensated diameters, D' , and as D' varies inversely with variations in N it follows that the rates of P.E. vary inversely with variations on N , or, expressed equationally: Let P.E. = rate of P.E. in wheat in concrete bins, P.E.' = rate of P.E. in wheat in bins of "X" material, N = value of product $4 \times k \times u$ in wheat in concrete bins, and N' = value of N in wheat in bins of "X" material, then

$$\frac{P.E.}{P.E.'} = \frac{N}{N'}$$

As the value for N in wheat in concrete bins is known to be 1.0, and as the rate of P.E. in 59.5 pound wheat in 22' circular, concrete bins, 100' deep, is 7% (as deter-

[Concluded on page 431.]

Rates of Packing Effect in Grain in Concrete Bins 100 Ft. Deep



To find percentage to be added to actual volume, trace figures at left showing test weight of grain, along horizontal line to intersection with curve representing hydraulic radius of bin in question. Project this intersection, vertically, to the bottom, where figures show percentage to be added.

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Importance of the Soybean

From address by R. O. CROMWELL, Chicago, Ill., before Agricultural Council of Chicago Ass'n of Commerce

The soybean is a native of southeastern Asia, has been grown in China for several thousand years, is the most important legume now grown in China and Japan and furnishes most of the protein in oriental human food other than fish.

In recent years, about 55 to 70 per cent of the acreage planted alone has been harvested for purposes other than for the beans—mostly for hay, in the United States. Figures of production used herein refer to the crop harvested as beans or as the U. S. Department of Agriculture says for grain. Illinois and Minnesota, by statute, have declared the soybean a grain and subject to the rules of inspection for other grains.

Trade in soybeans was largely restricted to the orient until about thirty years ago. Since that time production and trade has spread to other countries but cultivation leads in Manchuria, China, Chosen (Korea) and the United States.

Introduction of numerous varieties and tests by the Department of Agriculture have found varieties suited to a wide range of soil and climate affording far-reaching possibilities to the future of our agriculture. Over 5,000 samples have been collected from abroad for tests.

Attention, in the future, thru breeding experiments, must be given as well to quality of beans from the standpoint of quality of constituents in the beans.

Increased acreage and production of this legume in the United States was first stimulated by the demand for seed because of its value as a new nitrogenous hay on medium to poor uplands and acid soils, where clover and alfalfa do not thrive. On such land the soybean, because of its high capacity for the production of feed units, may take the place of wheat, oats, barley, rye, and even of corn. But, if acid soils are limed and poor soils mineral fertilized, good yields can be obtained.

Since the soybean is still produced in the United States primarily for forage purposes, it is preserved for this use either as hay or to some extent as silage. It is also cut for green feed or pastured, and only thirty to forty-five per cent of the crop is harvested as beans. Soybean hay is equal in value for feed in every respect to the premier standard, alfalfa.

In the northern states, the very early and early varieties, mostly those adopted from northern Manchuria, give yields of seed, and later varieties may be grown for forage. In the lower portion of the gulf states, seed seldom develop normally, although an excellent growth of plant for forage generally results.

The soybean is a warm weather plant. A prolonged cold germination and seedling growth period, especially if wet with a resulting crust, is detrimental to stand and to the quick, early growth necessary to win the race with weeds. However, except during the seedling stage, the soybean resists drouths of short duration and withstands a wet season well. It is little affected by light frost toward maturity or even when young.

Soybeans contain from 30 to 46 per cent protein, and from 15 to 23 per cent oil. Bean meal averages about 41 to 44 per cent protein, compared with 40 per cent for cottonseed meal and 33 (old process) to 37 (new process) per cent for linseed meal, the two strongest protein meal competitors of soy meal. Wheat middlings and bran contain slightly over 16 per cent protein. Because of high protein content, oil meals should always be fed in mixture with proper amounts of carbohydrates, minerals and roughage. The method of preparation of soybean meal alters its palatability as well as its digestibility. Probably about 525,000 or more tons of soybean meal were farm fed in 1935-36 from our largest soybean crop.

Crop Estimates.—I expect the 1934 and 1935 crops, after revision, to approximate 24,900,000 and 45,700,000 bus., respectively. Production for a few years previous to 1934 may also be revised. My last estimate, Nov. 4th, of the 1936 crop was 28,152,000 bus. The official crop year is considered to begin on Oct. 1 each year. Movement of new beans from farms to Chicago this year, considered somewhat later than usual, began practically on that date.

Three Methods of Removing Oil from the Beans are in commercial operation. By these methods a ton of soybeans yields about 1,600 pounds of oil meal, or 80 per cent, and 250

pounds of oil—12½ per cent. The remainder is moisture, loss, foots, etc.

Hydraulic Press Method is the oldest method of extracting oil from seed by expression. The roller-flaked and ground product, after cooking with live and jacketed steam, is pressed between plates in a stand press by means of pressure from a compressor operated ram. This method is used almost generally in linseed and cotton seed processing plants. In this method the meal still contains 5 to 6 per cent oil.

The Expeller Method is at present the most widely adopted. The operation is continuous and the principle that of a household meat grinder. A pressure about six tons to the square inch releases the oil after preliminary cracking of the beans, drying and heat tempering. Expeller produced meal contains 2 to 5 per cent oil.

The Extraction, or Solvent Extraction of oil from roll-flaked seeds, dissolves the oil by a suitable solvent. The extracted meal is heat-treated to remove all traces of solvent, and cooked thoroughly. The solvent is recovered from the oil by distillation and used repeatedly. Solvent extracted meal contains ½ of one per cent oil.

Quoting from a well-informed, practical authority, "that each of the three methods is highly important for the purpose it serves in producing specialized soybean by-products, and who can tell at this time, which, or what, will be the most important or most used in the next ten years?"

The United States Bureau of Census report shows the following figures of soybeans crushed and products produced and the number of crushers reporting:

Year	Number of Mills Reporting by Quarters	Soybeans Crushed (Bus.)*	Oil Produced (Pounds)*	Meal Produced (Tons)
1935-36	...30 to 43	25,181	208,964	599,855
1934-35	...19 to 21	9,105	73,123	222,979
1933-34	...11 to 18	3,053	26,196	74,047
1929-30	...	1,666	13,424	39,995
1925-26	...	350	2,638	8,416

*Three 000 omitted.

Known Uses of Soybean By-Products, oil and meal, are many. The public has been well informed by the press, in the last year or two, of the wide range in the diversification and number of products.

The greatest number of uses is found for the oil. Outside of the value as an animal feed, the meal remains the less valuable by-product in volume of consumption, as well as in the number of known products, which can be manufactured from it. The human stomach consumes, at present, a large portion of factory products made from both oil and meal. Human and animal stomachs have a limited capacity. Any food or feed is more or less in competition with every other food or feed. In order to go far in absorbing the acreage, producing or potentially able to produce, a surplus of agricultural products, further improvement in products for industrial use must take place. In spite of the large number of products now being made commercially or experimentally, the volume of consumption of many of them is small at present. In connection with several manufactured products, most or all of the technical problems have been solved, and a few of them are in commercial or even volume production; but before others can be offered successfully to the public, certain such problems require solution. Still later the consumer must be educated and sales-resistance overcome.

Bean oil paint is grease resistant, retains pigment color well, not yellowing with age, and forms a permanent elasticity not possible with other oils. Bean oil paint, varnish and enamel, excel for some purposes. Prominent uses are for automobiles, refrigerators and metal packages, but increased use in house, barn and special paints in recent years is noted. It is estimated that 4 per cent of the oil used by the paint industry is soybean oil. In varnishes a non-break oil is desired. Such an oil is now made from raw bean oil. It is suited for use with the new synthetic resins, made from carbolic acid and formaldehyde, in the manufacture of varnish.

Competition of other oils with soy oil is largely settled by the factor of price. In fact, the soybean, in the manufacture of many products into which it enters, must meet other competitive raw materials on a rather close price basis.

Lecithin, a complex, fatty material, containing phosphorus and nitrogen, is extracted from soy oil. The bean contains 1.5 to 2.5 per cent lecithin, but, industrially, chemists have been unable to extract the last one-half per cent. Egg

yolks contain 7 to 10 per cent of this lipid, but produced from this source is expensive and has been used chiefly as medicine. Lecithin is now being used, also, where emulsifying action is desired, as in emulsion sprays, salad oil, ice cream, chocolate malted milk mixtures, chocolate candy, and in the tanning of leather.

Soy oil competes with other vegetable and animal oils in the making of glycerine and soaps. It is used alone for soft soaps, but requires the addition of hard fats for hard soaps.

Other uses of soy oil are the inclusion in core binder in metal casting, printing inks, rubber substitutes and explosives. These uses are not yet extensive.

Soybean meal's use in the making of glue probably was the meal's first permanently established outlet in the industrial field. Soy meal glue holds almost complete monopoly wherever moisture is a factor in successful glue use, such as in the production of plywood and laminated insulating board.

Milk casein has numerous uses, to several of which vegetable casein from soybean milk has been adapted successfully. One company, which cooperated with the paper industry, claims to have developed a casein for use in paper sizing which gives a glossier coat and produces a better paper, even from lower grades of wood pulp than formerly could be used. A bean oil product is used in making waterproof paper and wallpaper.

Since the synthesis of resinoids was accomplished in 1912, much attention has been given them in the moulded and cast forms, called plastics. A thermoplastic resin is formed from the action of formaldehyde on some forms of protein. Soybean meal protein is used for this purpose. All of you are familiar with articles made from such material. Their uses in Ford automobiles is well known.

Probably a relatively new product from soy meal flakes, by the solvent extraction process, produces a larger and firmer head on a glass of beer, thus allowing the retailer to sell us more foam and less beer. Seriously, however, the quality of beer is improved and another important outlet for bean meal appears.

Soybean meal flour is used and sold in considerable volume in bread, cakes, pastry, crackers, macaroni, infant and diabetic foods. Flour, edible fats and meal feed for livestock, returns, at present, about 85 per cent of the money spent for soybean products.

A list of 47 companies manufacturing products from soybeans, exclusive of feeds, meal, raw and refined oils, is incomplete, but include probably all of the present important ones. Of these companies, 12 are in Chicago, 30 are known to make edible products, and 17 inedible products. Seven concerns are known to manufacture paints, varnishes and enamels, 2 plastics, and, at least 4, soaps. Glues, core oils, linoleums and rubber substitutes are said to be offered by one or two companies on the list. Of edible products, 15 companies make flour, 2 make pancake flour, 4 breakfast foods or cereals, 11 baked flour products (including bread, cake, wafers, cookies, noodles, plum and fig pudding), 4 canned baked beans and green vegetable



R. O. Cromwell, Chicago, Ill.

beans, 3 milk and malted milk powder, 4 nuts and confections, 3 meat-substitutes, 2 candy, 2 lecithin, 2 soy sauce, and one each, coffee substitute, cheese, bean-sprouts, and canned curd.

Our Foreign Trade in Soybeans and bean products has dwindled to small proportions since the recent increases in domestic production and the advent of tariffs. The tariff on beans into the United States is \$1.20 per bushel, on meal \$6.00 per ton (3/10 cents per pound), and on oil 3 1/2 cents per pound, or not less than 45 per cent of its value. These tariffs keep out the foreign beans, the oil fairly well, but Manchurian meal, duty paid, is offered at Atlantic ports at about 6 or more dollars per ton below domestic meal, and at a greater discount at Pacific ports.

The soybean crop in Manchuria averages more than 4 times our largest crop. The bean, but especially its by-products, are sold in large volume in world markets. Since 1931, when American grown beans were first exported, there has been an open European market to our farmers. With economical methods of production and high quality beans, America may be in a position to compete at times for the 50 million bushel trade in Europe.

In 1935 the United States exported about 4 million bushels of soybeans, due to a reduced, poor quality, Manchurian crop, but normally it is questionable whether our farmers will be able to compete with cheap Manchurian labor without receiving considerable premium for quality beans.

Soybeans in Chicago elevators, not including those in processors' elevators, was 572,000 bushels on last Saturday, Nov. 14. Last week I predicted the peak of farm sales would be reached about the middle of the current week. Inspections of soybeans in Chicago last calendar year were over 5,000 cars; Peoria inspected 1,440 cars, East St. Louis 857, Taylorville 692, and Kankakee and Springfield combined, 189 cars. Indiana inspected 1,338 cars, Iowa 461, Missouri, 1,051, Ohio 1,390, and the total inspected for the country was 13,648. The largest United States crop of beans was marketed during the period, Oct. 1, 1935, and Sept. 30, 1936. During this period, Chicago received 10,320,000 bushels of beans, or over 7,000 cars.

First introduction to future trading in soybeans, on any organized exchange took place on Oct. 5, on the Chicago Board of Trade. In very recent years, soybean meal prices have occupied an intermediate position between cottonseed and linseed meal prices, tho closer to those of linseed meal. Linseed meal formerly sold at a premium over cottonseed meal. Since soybean meal began to be substituted for linseed meal in volume, increased production of bean meal has had the same effect on linseed meal prices, as would increased production of linseed meal. Heavy imports of cottonseed, coconut and other oil meals depress bean meal prices along with the price of other oil meals. Only a limited amount of bean meal can be sold on the basis of the relatively higher linseed meal prices, and, as larger supplies are offered, soy meal has to compete more directly with the lower priced cottonseed meal, at the same time probably lowering also the price of linseed meal.

The Futures Market.—Because of the smaller 1936 crop of beans and feed grains than in 1935, the former inclination to feed at present prices of animals and feeds, and the increase in bean processing capacity to a total capacity greater than the expected total 1936 crop of beans, bean prices have advanced since the beginning of the drouth this summer. The price of bean futures has advanced since the beginning of trading in early October. Yesterday and today both December and May beans advanced the full 4

cents' limit allowable in one day's trading. Spot beans followed the futures. However, except on about 3 days in the last 40, bean price action has not been erratic, and, I believe, the futures market, to date, considering its age, has functioned as well as most of the trade expected. Furthermore, futures trading has broadened the bean market by affording a means of hedging and in this way, in my opinion, has obtained a better price for the farmer than had there been no futures trading.

New Federal Taxes for Payrolls

[Continued from page 425.]

attained the age of 65, resided in the state for a total of at least 5 years in the 9 years preceding his application, and lived there continuously for at least one year immediately before applying for such aid. Inmates of public institutions are expressly disqualified. The amount of such payment is determined by each state, and will probably be approximately \$30, since the Act limits the federal aid to not more than \$15 per month for the individual, provided the state in which he resides appropriates a like amount. There is nothing to prevent a state from contributing more than \$15 per month in special cases nor is there any requirement that as much as \$15 be allowed from the state funds.

Maritime Strike

The maritime strike that has tied up the west coast for nearly four weeks is having an effect on the importation of grains. At Vallejo, Cal., and at Oakland, full cargoes of corn were held up, unable to unload, at Los Angeles, half a cargo and several lots, and at Seattle part of a cargo awaited completion of unloading. Sympathizing with the strikers terminal elevator workers have virtually ceased operations.

Conferences between the Pacific Northwest Feed Ass'n and other interested bodies and the strike com'tees of the Maritime Unions, resulted in briefly opening the docks at Puget Sound for the removal of cargo deposited prior to Oct. 29. The open period was not extended to ships tied up by the strike, and was promptly closed again on the morning of Nov. 13.

Cash grain trade along the coast is completely tied up. A few shippers, seeking to move Pacific northwest wheat, are seeking to make arrangements for shipments thru British Columbia ports. Such shipments can move only to Europe and the Orient. The intercoastal facilities in California will not permit the receipt of water-borne grain. Some elevators and mills have been inactive literally since the beginning of the strike, others are expected to close almost any day.

Grand Opening of 40,000 Bus. Elevator at Pierson, Ia.

Last June the Farmers Co-op. Elevator Co. of Pierson, Iowa, suffered the loss of its elevator and other buildings by fire. A contract was soon let to the T. E. Ibberson Co. for the erection of a new set of buildings, which includes a new 40,000 bushel elevator, a large warehouse, storage for ten cars of feed, a complete feed mill building with equipment and a special warehouse for the feed mill, along with a sales room, or store building.

The elevator has 18 bins providing storage room for 40,000 bus. of grain. The first or work floor of the elevator is a cross type. The house is fitted with one leg, having extra large D.P. buckets on a rubber belt, a Winters head drive being used with enclosed type motors.

The driveway is fitted with S-S Mfg. Co.'s receiving air dumps and steel grates in floor over the pits. A full basement was provided under the whole elevator and driveway.

On the workfloor one of the largest size cleaners manufactured was installed along with a second large needle machine for cleaning barley. These machines are served by dust collectors.

Attached to the elevator is a large ten car capacity warehouse fitted with maple floors and special loading platforms.

The receiving scale is a 15 ton Fairbanks-Morse scale fitted with a Fairbanks-Morse Printomatic Weigher. This is a dial type of scale with printing device, which is becoming very popular where commodities are bought and sold. It is operated by a small electric motor and all that is necessary for the operator to do is to push a button and the machine automatically prints the weight and indicates the weight on a dial for the customer at the time the weighing is done. The printing is also done on duplicate tickets, giving one copy to the customer and one for a permanent record.

The driveway approaches leading to and from the elevator have been paved, making a cement highway directly up to the building and away from same, in addition to a pavement leading past the feed mill building.

A S-S manlift is provided in the elevator, giving easy access to cupola floors from the workfloor in the elevator.

A large sales and office room were provided, shelving and table spaces being provided for the display of commodities.

A special warehouse was built for concentrates to be served to the mill building. It is fitted with a Fairbanks-Morse dormant scale in the floor.

A Richardson automatic scale of 2250 bus. capacity was provided for weighing grain into cars from the elevator.

A feed mill building provided with 12 special



Conveniently arranged work floor of Farmers Elevator Co.'s Feed Mill at Pierson, Iowa
[See facing page.]

bins adjoins the elevator. This feed mill building has a special driveway for bulk loading of feeds and a special loading platform on the outside of the building. A manlift was installed to give access to the top floors in the mill building from the main floor and the basement. A full basement was provided under all of the warehouses and feed mill building.

The equipment in the mill building consists of one S-S feed mill with a blower system, using the newest type mill. A cob crusher and a corn cracker are located in the basement. A corn grader located directly over the bins is in the cupola, for handling the cracked corn products. A baler, ceiling type, one ton mixer was provided and this mixer is equipped with special fittings.

A transfer leg was installed in the mill building leading to all bins, as well as a special leg for feed products.

Fully enclosed motors were provided throughout this whole set of buildings and all of the floors throughout all of the buildings consist of factory maple flooring.

The interior of the feed mill and concentrate room were painted with three coats of white enamel, as well as all spouting and equipment therein, presenting a clean, attractive appearance.

On Friday, October 2nd, this building was dedicated and accepted by the owners. Secretary Wallace from Washington appeared at Pierson and made a talk. Over 4000 people were there all day at the celebration.

Mr. Dewey Forbes is the local manager and has been with this company for several years. Mr. Mulford Beeghly is the president and Melvin Dearing is the secretary of this company.

This elevator is located on the C. & N. W. R. R.

Cheyenne, Wyo.—Wyoming officials claim they will investigate if imported Argentine corn is a potential carrier of the hoof-and-mouth disease. A heavy purchase of this commodity was recently made for the Big Horn basin.

Estimating Quantities of Grain

[Continued from page 428.]

mined from the chart), the formula simplifies $P.E.' = \frac{1.0}{7 \times \frac{1}{N'}}$, or $P.E.' = 7 \times \frac{1}{N'}$. As the values

for N in wheat in bins constructed of tile or brick are almost exactly equal to 1.0, the rates of P.E. in wheat in these bins will be the same as in concrete bins and may therefore be determined directly from the chart. In wheat in wooden bins, however, the value for N is 0.899, and the formula then becomes: $P.E.' = \frac{1}{7 \times 0.899}$, and $P.E.' = 7 \times 1.11$, $P.E.' = 7.77\%$

= rate of P.E. in 59.5 pound wheat in 22' square wooden bins, 100' deep. The value for N in wheat in bins constructed of steel or iron is 0.833, and in this case the formula becomes: $P.E.' = 7 \times \frac{1}{0.833}$, or $P.E.' = 7 \times 1.2$

= 8.4% = rate of P.E. in wheat in steel or

Table of Reduction Factors						
Group	I	II	III	IV	V	VI
Depths						
From	90'	60'	45'	30'	15'	0
To	120'	90'	60'	45'	30'	15'
Factor	1.0	0.97	0.95	0.93	0.91	0.90

iron bins, 100' deep, with an equivalent diameter of 22'.

Further development of these ratios shows that practically the same proportions exist between the various values for N and N' throughout the scale of test weights in different grains, and analysis of further series of practical experiments involving grain in steel and wooden bins also shows the proportions to be constant. The constants 1.11 for wood and 1.2 for steel can therefore be accepted as applying to any chart reading in determining the rate of P.E. in grain stored in bins constructed of these materials, in this manner:

Let $P.E.' =$ rate of P.E. in grain in a wooden bin, and $P.E. =$ chart reading for grain

of the same test weight in concrete bins of an equivalent hydraulic radius, then $P.E.' = 1.11 \times P.E.$

Let $P.E.' =$ rate of P.E. in grain in a steel bin, then $P.E.' = 1.2 \times P.E.$

C—ADJUSTMENT FOR BINS OF DIFFERENT DEPTHS: Rates of P.E. in grain of one test weight, stored in bins of one size and constructed of one material, vary according to the depths of the bins, and another adjustment is necessary to provide for this variation. As shown under "E'", in chapter III, these rates vary directly with variations in the depths of the bins, but as this variation is not to a straight line, the adjustment cannot be made by application of a constant. Data obtained from a further series of practical experiments showed that the proportionate decrease in rate, per foot of decrease in depth, was slight, making it possible to arrange all bins in groups, according to their depths, and to provide a table of reduction factors which can be applied to the proper chart reading to determine the rate of P.E. in shallower bins.

To use this table to determine the rate of

P.E. in a shallow bin, first locate in the chart the applicable rate for a bin of equivalent size, 100' deep, apply the constant for wooden or steel bins, if necessary, then apply the proper reduction factor, as shown in the table, according to the depth of the bin in question.

The simplicity of this method of determining the rate of P.E. in any grain in any bin can best be illustrated by its application to a problem, involving all three steps, in the following example:

Required: The rate of P.E. in 56-pound rye, stored in a wooden cribbing bin, 18' \times 28', and 67' deep. **Step 1:** The hydraulic radius of this bin is first determined by computation, $A = \frac{504}{P} = \frac{504}{92} = 5.478'$. The rate

of P.E. in 56-pound rye in a concrete bin of an equivalent HR, 100' deep, is found on the chart to be 12.00%. **Step 2:** As this bin is constructed of wood, the constant 1.11 must be applied, $12.00\% \times 1.11 = 13.32\%$. **Step 3:** As the bin is only 67' deep, the reduction factor as determined from the table herewith is 0.97, therefore, $13.32\% \times 0.97 = 12.92\%$ = rate of P.E., in 56-pound rye in the wooden bin in question.

NOTE: The writer has had a recent opportunity to test the adaptability of the chart to commodities other than the five common grains. In a great variety of feed mill commodities including pulverized oats, oat meal, gluten feed meal, meat scrap, soybean meal, flour middlings, wheat bran, corn germ meal, screenings, sunflower seed and cracked corn, the rates of P.E. follow the proportion curves closely. Although the data obtained was not sufficient to support a positive statement, it did show that the various rates held to the same proportions. Until further experiments can be conducted in these commodities, their rates of P.E. can be found, with a reasonable degree of accuracy, by use of the chart and the constants and factors provided for common grains.

(To be continued.)

One result of overbidding. A well-known miller calls our attention to the fact that a certain milling company which went bankrupt a few months ago had for years followed the program of paying more for wheat than any other nearby mills were paying and at the same time selling flour below prevailing levels. It is the view of this miller that either one of these habits is enough to put a mill on the blink, but when the two are combined the result is inevitable.

The Hook-up.



Feed Mill and 40,000 bus. Elevator at Pierson, Iowa
[See facing page.]

Ladder and Stairway Accidents

Stairs and ladders are the most dangerous feature of a grain elevator. This is the conclusion in a report dated Nov. 15, 1936, from the Lumbermens Mutual Casualty Co. Of serious accidents to employees of grain elevators and flour mills reported to the company in 1935 and in 1936 to date 45% are the result of falls, principally on stairs and from ladders.

There are mechanical points of danger in a grain elevator, including the manlift, the truck-hoist and the feed-grinder and other incidental machinery, but the harmless-looking stairways and ladders kill and maim more employees than any other hazard.

On January 1, 1936, an employee of an Illinois elevator was found unconscious and dying at the foot of a stairway. He evidently missed a tread at the top due to insufficient lighting, stumbled and fell to the bottom, suffering a brain concussion that proved fatal.

Some months previously a rickety ladder in an Illinois elevator broke while used by an employee engaged in oiling. About to fall, he threw out his hand and it was caught in a pinion gear, resulting in severe fractures and laceration of the hand.

An employee of a Missouri elevator climbed up on a barrel to work on the removal of a conveyor overhead. He over-reached himself on this insecure elevation. The barrel teetered and he fell to the ground, sustaining pelvic fractures.

Carelessly placed ladders can also result in injuries to the public, for which the grain elevator operator may be held legally liable. For example, in Missouri a ladder being used for repairs on the roof fell and struck a visiting grain buyer.

Every grain elevator proprietor and manager is urged to make an immediate inspection of all the ladders and stairways on the premises, and then to make necessary repairs and replacements. All employees should be given the facts and should be warned to use stairways and ladders carefully.

The fact that operations in a grain elevator are largely vertical, accounts for extensive climbing and calls for unusual precautions to avoid ladder and stairway accidents.

Defective ladder rungs should be promptly replaced. Rungs should be evenly spaced. Stationary ladders should project three feet above the landing. Portable ladders should have safety feet to prevent slipping. Oilers should use ladders with hooks at the top. Ladders should be properly placed to avoid over-reaching.

Worn treads in stairways should be replaced. Hand rails should be provided. Stair and ladder well openings should be protected with rails. Adequate lighting is essential to safety.

Portable ladders should not exceed 30 feet in length and should be built with side rails which are spread. On ladders 10 feet or less in length the width between side rails should be 11½ inches with an increase of ¼ inch for each additional foot of length. Side rails, rungs, strips and all other parts of the ladder should be free from splinters, projecting nails, sharp edges, etc. Ladders should not be painted, as paint will cover up developed imperfections.

All portable ladders should be equipped with safety feet to prevent slipping when ladder is being used. Spiked feet can be used effectively on rough wood floor surface, but other types

are equally effective if kept in good condition. Illustrations herewith show various shapes of safety feet.

Tugwell's Resignation

The resignation of Rexford G. Tugwell as undersecretary of agriculture at a time when his plans to remake America have been but fairly started gives rise to speculation whether the administration contemplates abandoning the regimentation of farmers and industry.

The rising tide of prosperity over the whole world is penetrating the United States. Fewer are on relief, and an increasing number of business enterprises are making large profits, thus diminishing the popular demand by the "underprivileged" and down-trodden masses for "social justice." Perhaps the politicians at Washington sense that the Tugwellian philosophy has lost, or is soon to lose its appeal, and the retirement of Tugwell to private life is the first step toward return to the principles that have made America great.

Dr. Tugwell has accepted a position as executive vice president of the American Molasses Co., the president of which is Chas. W. Taussig, who was sugar adviser to the A.A.A., and of which a director is A. A. Berle, who was special counsel of the A.A.A. on sugar marketing agreements. They assisted in drawing up the A.A.A. sugar control under which owners of plantations were paid \$79,545,038.22 in rental and benefit payments.

From Abroad

English farmers are interested in artificial drying of hay. A demonstration of a hay drier at Berwick Farms recently attracted over 2,000 persons.

The wheat crop of the Union of South Africa for 1936-37 is provisionally estimated by the International Institute of Agriculture at 15,800,000 bus., against 20,197,000 bus. in 1935-36.

Warehousemen and millers who have storage room are putting grain traders out of business in England, with the result that at Avonmouth 50 per cent of the plant and machinery of the Docks Com'ite is idle, the private traders using the public facility not being able to compete with the warehousemen and millers.

India's flaxseed exports since April 1, 1936, have reached a total of 8,250,000 bus. compared with slightly under 4,000,000 for the like period in 1935. According to Broomhall's report, there remains very little flaxseed in India for export. Prices are consequently advancing. Some Indian linseed was reported as arriving in Chicago this week.—Archer-Daniels-Midland Co.

Establishment of two experiment stations, one in the state of Santa Catharina, the other in Rio Grande do Sul, and 34 additional wheat growing posts in other states of Brazil, principally in the southern part of the country, is provided in a bill submitted to the Federal Chamber of Commerce by the president. The purpose is to stimulate Brazilian wheat production. A tax of 600 reis (approximately 6c) per sack of flour milled in Brazil from imported wheat is suggested to produce an annual income of 7,570,000 pesos with which to finance the experiment stations and their outposts.

Supply Trade

Minneapolis, Minn.—P. H. Bingenheimer, pres. American Grain Fumigant Co., died recently.

Minneapolis, Minn.—Charles H. Harding, formerly connected with the Strong-Scott Mfg. Co. and the E. A. Pynch Co., died Nov. 13.

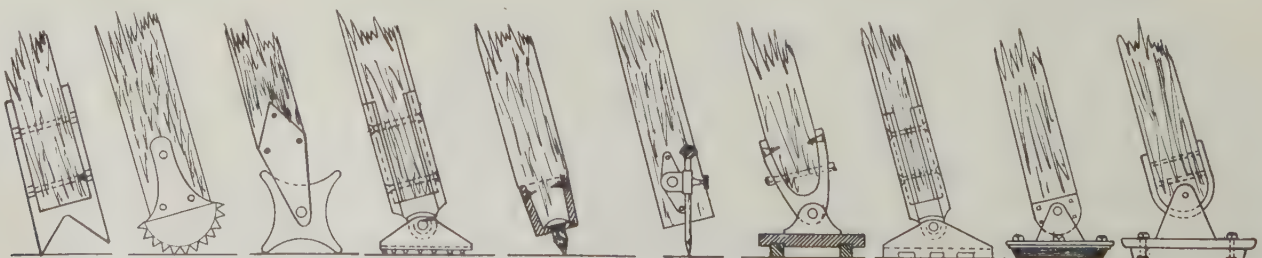
Minneapolis, Minn.—The Superior Separator Co. has just moved into its new home at 1179 1st Ave. S. E. The company has been occupying a factory in St. Paul, Minn., since its organization in 1929.

Milwaukee, Wis.—The Stearns Magnetic Mfg. Co. recently opened a sales office in Philadelphia under the management of James Whiting, and appointed the S. O. Otrich Co. its San Francisco representatives.

Buenos Aires.—Tenders for the erection Oct. 25 of a chain of grain elevators closed in Buenos Aires as well as in the embassies and legations in Great Britain, United States, France, Italy, Czecho-Slovakia, Austria, Denmark, Germany, Switzerland, Belgium, Sweden, Holland and Canada. The number of local tenders was 25 made by the following firms: Christiani and Nielsen, Waiss and Freytag; Compañía General de Obras Públicas (GEOPE); Fiore y Cia; Buhler Hnos. S. A.; Acevedo and Shaw S. A.; Polledo Hnos and Co.; Parodi and Figini; Siemens Bauunion; Gruen and Bilfinger; Cereal Machine Co., Ltd. (CEMAC).—*Times of Argentina.*

Silver Creek, N. Y.—Catalog No. 158 just issued by S. Howes Co. devoted to Eureka Steel Cut Corn Machinery opens with interesting historical reference to that period of twenty years ago when "steel cut" was new in feeds, a part of feed making destined to meteorically expand into titanic totals of annual tonnage far exceeding the rosiest prophecy of any enthusiast a quarter of a century ago. The reader is reminded this was made possible by inventive genius—the engineering talent and skill of American manufacturing resourcefulness. This manufacturer has held a prominent part during a 20-year period of outstanding refinement and betterment in "steel cut" corn equipment. The book pictures and describes safe, simple methods of lowering costs to new levels—raising quality to higher standards. It deserves reading by everyone anxious to be well informed.

Frankfort, Ky.—The Great Atlantic & Pacific Tea Co. has filed suit against the Kentucky Department of Revenue, attacking the 1936 graduated Chain Store Tax Act. The company contends the tax is unconstitutional, discriminatory and confiscatory, and seeks to recover \$52,352 paid the revenue department this year under its provisions. The 1936 Act taxes individual stores \$2 a year, but graduates the tax up to \$300 for each store over 50 in a chain, and in addition applies a flat tax of \$7,353 on chains of 50 or more stores.



FOR WOOD AND BRICK FLOORS

FOR WET, DUSTY OR OILY CONCRETE OR WOOD FLOORS

Footings for Elevator Ladders

Grain and Feed Trade News

Reports of new firms, changes, deaths and failures; new elevators, feed mills, improvements, fires, casualties and accidents are solicited.

ARKANSAS

Yocum (r. d. from Green Forest), Ark.—James Priest, who had been operating a grist mill here for eight years, died in the Berryville, Ark., hospital on Oct. 24 from injuries suffered three days before at his mill, when the drive wheel flew off.

Mineral Springs, Ark.—One of the stones of the grist mill operated by Grover McCullough here exploded recently, breaking into three pieces, one of which was blown thru the roof of the building. Mr. McCullough was standing beside the machine regulating it when the explosion occurred, but fortunately escaped injury, as did also two other persons who were in the building at the time.

CALIFORNIA

Dixon, Cal.—Ralph Weyand has become a partner with his uncle, W. J. Weyand, in the California Mealalfa Co., feed manufacturers.

Pomona, Cal.—Associated Grain & Milling Co., incorporated; capital stock, \$20,000; incorporators: F. D. Brown, F. M. Goldsberry, R. G. Hillen, Jr.

Pomona, Cal.—The Pomona Grain & Milling Co.'s plant, which has a capacity of about 400 tons of mixed feed daily and is equipped with new machinery, has been purchased by Ernest Phillips, owner of the Community Feed & Supply Co., of Chino, Cal.

Van Nuys, Cal.—A new 100-ton feed mill and warehouse has been opened by Harry Glesby, under the name of the Mission Grain & Milling Co. Mr. Glesby formerly owned and operated the Security Feed & Supply Co., of this place, and also the Reliable Milling Co.

Los Angeles, Cal.—Fire destroyed the cottonseed warehouse of the California Cottonseed Oil Corp. on Nov. 15, with an estimated loss of \$1,000,000. About 17,000 tons of cottonseed, one-third the amount expected to be crushed this season in the Los Angeles area, was destroyed.

CANADA

Toronto, Ont.—Net profits of \$185,288, after depreciation and interest, are reported by Toronto Elvtrs., Ltd., at the end of the fiscal year. July 31. This compares with \$181,651 for the preceding year.

The Canadian Government has closed its large terminal elevators at Moose Jaw, Lethbridge and Saskatoon, which have a total capacity of over 11,000,000 bus. and which have been operated by the Board of Grain Commissioners for Canada for several years. The reason given was lack of grain for storage.

Toronto, Ont.—A new cereal plant is being established here by the Canadian Doughnut Co., Ltd., subsidiary of the Doughnut Corp. of America, New York City, which has rented factory space and is installing the necessary equipment, representing an outlay of about \$50,000. The company will purchase large quantities of Ontario soft wheat and western hard wheat flours for the manufacture of its product. T. E. Andrews is pres. of the Canadian company.

COLORADO

Denver, Colo.—The new 400,000-bu. concrete elevator and 1,200-barrel mill, which have been under construction here for several months by the Omaha Flour Mills Co., to be operated locally as the Omar Mills, Inc., have been completed and are now in operation. A full description of the new plant appeared in the March 11 Journals. Harold Roth, grain buyer and sales manager in the company's Omaha offices for many years, is manager of the new plant. H. A. Brickham, formerly with the Farmers National Grain Co. in Omaha, is wheat buyer and traffic manager. Horner & Wyatt designed the new plant.

Gill, Colo.—The Gill Farmers Co-Op. Co. has purchased a Howell 24-inch, four-roll feed mill with Hyatt Bearings and built-in scalper. The new equipment will enable the company to grind commercial feeds and customers' grists.

ILLINOIS

Mahomet, Ill.—The Mahomet Co-op. Grain Co. was duly adjudicated a bankrupt on Oct. 31.

Farina, Ill.—A diesel engine was recently installed in the elevator of Carl E. Schmidt & Son.

Adrian, Ill.—A new hammer mill has been added to the equipment of the Adrian Elvtr. Co.'s elevator.

Grant Park, Ill.—George A. Lauffert is installing a 22-foot, heavy duty Soweigh Motor Truck Scale at his elevator.

Sunbury, Ill. (Dwight p. o.)—The Bartlett Frazier Co. has installed a new 20-ton Soweigh Motor Truck Scale in its elevator here.

Freeburg, Ill.—The Freeburg Milling Co. has just installed a new truck dump at its elevator, capable of taking care of large trucks.

Springfield, Ill.—The new workmen's compensation health and safety bureau of the Illinois Mfrs. Ass'n will be under the directorship of Clark D. Bridges.

Kenney, Ill.—Soybeans owned by the Shellabarger Grain Products Co. and stored in an elevator here were damaged by fire of undetermined origin on Nov. 15.

Pleasant Plains, Ill.—An up-to-date feed grinding and mixing department has been added to the elevator of the Pleasant Plains Farmers Elvtr. Co. by the manager, F. W. Hagen.

Cooksville, Ill.—Benjamin E. Edell, 57 years of age, manager of the Cooksville Grain Co.'s elevator for 20 years, died Oct. 27, at a Bloomington hospital, from double pneumonia, following an attack of flu.

New Holland, Ill.—I have installed a new heavy duty overhead electric lift, in addition to the new truck scale. Am also enlarging my new elevator so as to double the capacity to 23,000 bus.—F. W. Milhahn.

Harvel, Ill.—The Shellabarger Grain Products Co., which recently bought the Harvel Grain Co.'s elevator, is making extensive repairs, including remodeling the driveway, and will establish a soybean mill, it is reported.

Broadlands, Ill.—The Broadlands Grain & Coal Co. plans to rebuild its east elevator and already has the lumber on the ground to start. The old elevator at the west edge of Broadlands is no longer in use and will soon be torn down.

Good Hope, Ill.—The Good Hope Co-op. Co. has been remodeling its elevators. New windows and doors have been put in the west elevator, and a coat of aluminum paint given the elevator and feed house. At the east elevator a new driveway has been put in and a Western Electric Overhead Traveling Truck Dump has been installed.—D. Roudebush, mgr.

Sciota, Ill.—The Farmers Elvtr. Co., whose house burned some time ago, has completed a 12,000-bu. concrete elevator and a sheet iron warehouse and expects to start work soon on the construction of a new office building and scale house.

Arlington, Ill.—The Arlington Grain Co. is having its elevator raised and a new foundation put in, also a new waterproof boot pit. A 15-ton, 20x9-foot dump scale is being installed and other repair work done. George Saathoff has the contract.

Joy, Ill.—The plant of the Joy Feed Mills has been remodeled by George Saathoff, who has built a 20x20-foot, 18-foot high cupola to the building, installed a Western Cleaner and Sheller, reset some of the machinery, built new spouting and put the plant in good shape.

Bushnell, Ill.—The elevator here formerly owned and operated by George Long and for several months by Strike Simonson, was sold at public auction Nov. 12, to A. W. Kukuk, the highest bidder. It has not been in operation for the past year, following the death of Mr. Simonson.

Cambridge, Ill.—A half interest in the Powers Elvtr. & Feed Co. has been purchased by Donald Hutchinson, and the name of the new partnership will be Powers, Hutchinson & Co. Walter H. Powers has been owner and manager of the business for seven years. The new organization will continue to operate the elevator, coal and feed business and has also added a new line, having purchased the Cambridge hatchery.

Metamora, Ill.—In the remodeling of Waldschmidt & Schneider's north elevator (reported in the Oct. 28 Journals), two new elevator legs are being installed, one for ear corn, equipped with 130 14x7-Calumet Buckets, standard spacing, the other for small grain, equipped with 225 11x6-Calumet Buckets, spaced close together. The elevator will be covered with galvanized iron siding and roofing. George Saathoff is doing the work.

Graymont, Ill.—The Graymont Co-op. Ass'n is having a feed mill building erected at its elevator, to be equipped with a grain cleaner, mixer, Gruendler Hammer Mill, two elevator legs and Fairbanks-Morse Motors for power. A 1,000-bu. ear corn crib will be erected also and a Western Sheller and Cleaner installed to take care of the increasing ear corn business of the elevator. George Saathoff has charge of installing the machinery.

Spencer (New Lenox p. o.), Ill.—A bold daylight robbery was effected by two bandits, on Oct. 31, who entered the New Lenox Grain Co. office in the afternoon as Manager Philo Allen was working on the books, commanded him to face the wall and make no outcry. They then proceeded to take the contents of the cash register, ripping the telephone box from the wall as they departed, so that Allen could not call the police. The bandits escaped in a high powered automobile.

STRATTON GRAIN CO.

MILWAUKEE, WIS.

CHICAGO, ILL. ST. JOSEPH, MO. NEW YORK, N. Y.

BUYERS AND SELLERS OF GRAIN
SPOT & "TO ARRIVE", CONSIGNMENTS

MILL FEEDS — FEED PRODUCTS — BY-PRODUCTS

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CHICAGO NOTES

Board of Trade memberships are selling at \$4,200, net to the buyer, a decline of \$50 from the previous sale.

A petition to place Orrin S. Dowse in nomination for second vice-pres. of the Board of Trade has been circulated among the members.

Changes in rules and regulations of the Board of Trade are published elsewhere, under the caption "Changes in Chicago Board Rules."

Grain and financial writers numbering about 100 were entertained at dinner Nov. 20 at the Palmer House by the officers and public relations committee of the Board of Trade.

Franklyn K. Chandler, with Thomson & McKinnon's Milwaukee office for the last 10 years, is manager of the firm's new branch just opened in the Merchandise Mart. Mr. Chandler has been in the grain and brokerage business since 1920.

The annual convention of the Farmers National Grain Dealers Ass'n will be held in this city on Dec. 1, giving those attending an opportunity to visit the International Livestock Exposition, which is being held from Nov. 28 to Dec. 5.

Members of the local chapter of the Society of Grain Elevtr. Superintendents will be entertained, on Dec. 8, at the Riverdale plant of the Arcady Farms Milling Co., when they will make an inspection tour of the elevator and plant. An evening of entertainment will follow.

New members of the Board of Trade include Charles C. Flanley, pres. of the Flanley Grain Co., Sioux City, Ia., and A. G. Schultz, of Schultz-Baujan & Co., Beardstown, Ill. The memberships of William J. Nye and of the Estate of William F. Burrows have been transferred to A. W. Stewart and Arthur E. Cobb, respectively.

A petition was recently circulated on the Board of Trade nominating Fred S. Lewis for president in 1937, in opposition to Kenneth S. Templeton, who is now first vice-pres. and who had already been nominated by petition, according to the new rule regarding nominations. Mr. Lewis was first vice-pres. of the board in 1925 and served as a director for a number of years.

INDIANA

Boston, Ind.—Boston Grain Co. recently purchased a one-half ton Sidney Special Mixer.

Boyleston, Ind.—The Boyleston Grain Co. has installed a new Soweigh heavy duty motor truck scale.

Muncie, Ind.—Radio station WLBC (1310 kc) is broadcasting the grain markets at 10:15, 11:00, 12:11 and 1:30 o'clock.

Huntertown, Ind.—Installed by the Huntertown Grain & Lbr. Co., recently was a new heavy duty Soweigh Motor Truck Scale.

Marshfield, Ind.—In the recent election Ura Seegar, operator of four grain elevators at different points was elected as a member of the Indiana Senate.

English, Ind.—J. C. Longest, sec. of the English Milling Co., who broke his collar bone some weeks ago in a fall at his home, is now able to be out.—W. B. C.

Newcastle, Ind.—The Western Coal & Feed Co.'s business has been purchased by Mrs. E. Heiser, who will operate it under the name of the Castle Feed Mills.

Elkhart, Ind.—Talmage D. Martin has installed a motor-driven Kelly Duplex Corn Cutter and Grader. The new machine has a high frame for sacking direct from the grader.

Mulberry, Ind.—Gray's Hatchery is building an elevator and installing a corn sheller and cleaner to take care of the increase in the handling of feeds to be ground and mixed for poultry, hogs and livestock.

Camden, Ind.—The Camden Elvtr. Co. entertained about 300 of its farmer friends at a banquet on the evening of Nov. 11. The guest speaker was an authority on livestock diseases and proper feeding.

Sulphur Springs, Ind.—The Wilson Grain Co. has built an addition for its feed manufacturing department, and is now able to handle 18 tons of feed daily. It has added a feed mixer and an oat huller and roller.

Crete (Lynn p. o.), Ind.—The Bowen Elvtr. Co. has purchased a one-ton Kwik-Mix, a corn cracker and grader, complete V-rope drive for hammer mill and other material, furnished by the Sidney Grain Mch. Co.

Evansville, Ind.—J. E. Stapp, formerly proprietor of the Henderson, Ky., Feed Co., is representing the Schultz-Baujan Milling Co., of Beardstown, Ill., traveling all of Kentucky and the Evansville territory.—W. B. C.

Evansville, Ind.—D. J. Nunn, sales manager for the Nunn-Better Milling Co., states his firm is remodeling and increasing its wheat storage capacity to 50,000 bus. and its milling capacity from 75 to 150 barrels per day.—W. B. C.

Treaty, Ind.—Oscar Trent, an employee at the Wabash County Farm Buro Co-op. Ass'n elevator, dropped 30 feet with the manlift recently, after the rope, connecting with the weight, snapped in two. Fortunately he escaped with only minor injuries and shock.—L.

Francesville, Ind.—The elevator of the Co-op. Elvtr. Co., Inc., caught fire in the cob chute, on Nov. 9, the blaze being extinguished before it reached the main building. Two weeks before, the elevator caught fire from a loose belt and Manager Huguet put it out with a chemical extinguisher.

Hamlet, Ind.—The 45,000-bu. elevator of the Hamlet Grain & Feed Co. burned on Nov. 17 from unknown cause, the fire starting in the drying room; loss, estimated at \$40,000. The elevator contained 30,000 bus. of corn, hundreds of tons of feed and salt and valuable machinery recently installed. The elevator was built in 1914.

Bristow, Ind.—The new plant of the Bristow Milling Co. at this place has been finished and is in operation. The new mill which takes the place of the plant destroyed by fire a year ago, is modern in every particular. The building was planned by Fred Smith, who operates the plant in conjunction with his father-in-law, S. L. Eppler. The storage tank, constructed of steel and concrete is 25 feet in diameter.—W. B. C.

Linton, Ind.—The Linton Mill & Grain Co.'s plant, consisting of a 60,000-bu. elevator and 100-barrel mill, also feed manufacturing equipment, burned early in the evening of Nov. 6. Loss, estimated at \$50,000, including 12,000 bus. of wheat, feed, flour and machinery. Nothing was saved except some books and records from the office, and Frank Sabo, owner, was slightly burned as he endeavored to carry them to safety. The fire was that to have been caused by defective wiring. Some of the wheat in the steel storage tanks beside the mill was parched in some places to the center of the tanks. At present the plans of Mr. Sabo to rebuild the plant are indefinite. Only a few months ago extensive improvements and installation of new machinery were completed at this mill. Operation of Mr. Sabo's plant at Switz City, Ind., on a much larger scale than it has been operating on, will be started immediately. Linton was the company's headquarters.

IOWA

Grand Mound, Ia.—F. Mueller & Sons Co. has increased the capacity at its local grain, feed and seed plant.

Des Moines, Ia.—Kent & Co., feed manufacturers, will immediately erect a new warehouse in the packing district here.

Ackley, Ia.—The Farmers Co-op. Elvtr. Co. is building an extension on its office and also installing new 15-ton scales. A. A. Carstens is the manager.—A. M. Vorhes, of Lamson Bros. & Co.

Meservey, Ia.—Recent windstorm damage to the roof and galvanized iron siding on the Farmers Terminal Elvtr. Co.'s plant here has been repaired. The Van Ness Const. Co. did the work.

Glidden, Ia.—The A. Moorehouse Co. is installing a new 14-inch 5-ply Atlas Rubber Elevator Belt in its plant here.

Webster City, Ia.—The Farmers Grain Co. has re-organized and hereafter will be known as the Community Co-op. Ass'n. H. W. Cramer is manager.

Hawarden, Ia.—The mill here formerly operated by Ernest Larson is now being operated by the owner, S. Q. French, under the name of the Sioux Valley Mill Co.

Palm Groves, Ia.—The Farmers Exchange is remodeling and rebuilding its elevator driveway floor, local men doing the work. Peter Greenfield is the manager.—Art Torkelson.

Fenton, Ia.—The Farmers Elvtr. Co. has completed installation of a large scale, having a 34x10-foot platform. A new truck lift, to accommodate large trucks, was also installed.

Knoxville, Ia.—A three-story brick building, 40x80 feet, with an annex 25x50 feet, is being erected by the Dockerson Produce & Feed Co., replacing the recent loss of its plant by fire.

Nevada, Ia.—The Potgeter Grain Co., which operates a line of elevators, on Nov. 14 opened a feed and seed store here, making its 15th store of this kind. O. S. Mathison is the local manager.

Churdan, Ia.—Walter Reynolds, manager of the Farmers Elvtr. Co.'s elevator here, while helping a customer to unload corn at the elevator recently, died from a heat attack. He was 68 years of age.—Frank M. Ward.

Eagle Grove, Ia.—We installed two 12,500-gallon oil tanks instead of 2,500-gallon tanks as reported in the press. We have also installed a new ear corn elevator with a truck lift for handling ear corn.—Farmers Co-op. Co., G. Larson, mgr.

Agency, Ia.—The grain elevator west of the Burlington station is being taken down. Last year it was used as a storage place for feed used in Federal aid projects. It is said that the use of trucks has made the elevator no longer useful.

Des Moines, Ia.—New equipment for the processing of soybeans was recently installed at the local plant of Spencer Kellogg & Sons. Hydraulic presses were replaced by a new expeller type capable of handling four times the capacity of the former equipment.

Rake, Ia.—The elevators of the Lincoln Co-op. Elvtr. Co. and of the Farmers Elvtr. Co. were broken into during the night of Nov. 5 and the safes at both places opened. At neither place is money kept overnight, so the thieves were disappointed. Money was apparently all they wanted, as nothing was stolen.

Cylinder, Ia.—The Farmers Elvtr. Co.'s elevator together with 6,000 bus. of oats burned November 18, also nearby sheds and several carloads of coal on the Milwaukee tracks near the elevator. A second Farmers elevator a half block distant, containing 8,000 bus. of corn, caught from exposure.—Frank M. Ward.

Traer, Ia.—The Farmers Elvtr. Co. has named Ed Hadacek temporary manager of its elevator, succeeding A. A. Agnew, who resigned recently, and who last March succeeded Mrs. O. L. Stover, the former Mrs. Nellie Ashbaugh, manager for nine years, who has been a resident of Austin, Minn., since her marriage last spring.

Fredericksburg, Ia.—The elevator here recently sold by the Kunz Grain Co. (whose headquarters are at Wesley, Ia.) to the Fredericksburg Produce Ass'n (as reported in the June 24 Journals), has been taken down and a warehouse 24x80 feet erected on the site. This new warehouse will be used to store feed and seeds.—L. L. Bittner.

Sioux City, Ia.—The newly renovated and decorated directors' room of the Sioux City Grain Exchange on the sixth floor of the Warnock Bldg. was dedicated on the evening of Nov. 10, when more than 60 business men of the city were guests of the directors. A dinner was served shortly before 7, after which motion pictures of Nicaragua were shown.

Muscatine, Ia.—Plans have been completed by Kent & Co. for the erection of a new feed plant here, with 10,000 tons' storage capacity. The company's feed plant at Indianola, Ia., burned last summer, as reported in the Journals, and the new plant will be erected here instead of at that point, as was the intention originally. The local branch will be operated under the name of the Mississippi Valley Grain & Feed Co., the incorporation of which was reported in the Journals' Nov. 11 number.

ELLIS DRIERS

Known the world over for reliability and perfection of product. Direct Heat — Indirect Heat — And Steam Heat. Also . . .

A complete line of Rotary Driers and Feeders for mill and feed plants.

The Ellis Drier Co.

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Chicago, Ill., U. S. A.

Alton, Ia.—Shortly after midnight, Nov. 19, fire was discovered in the lumber sheds of the Farmers Co-op. Elevtr. & Lbr. Co., from which it spread to the coal bins and elevator, destroying them all. Loss, estimated at \$50,000; buildings and contents were insured. Considerable feed was lost in the elevator.—Frank M. Ward, with Hart-Bartlett-Sturtevant Grain Co.

Sioux City, Ia.—A district meeting of elevator managers of northwest Iowa was held in the Rainbow Room of the West Hotel, on the evening of Nov. 10, attended by between 60 and 70. After the 7:30 o'clock dinner, a business session was held, consisting of an informal discussion of matters pertaining to the operation of elevators and prediction of future crops.

Sioux City, Ia.—The Acme Hay & Mill Feed Co., elevator operators, is now occupying its own building on Pierce St., about a block from its former location, and is remodeling the interior, converting most of the structure into a feed warehouse. Loading docks will be built and the floor raised from ground to truck level in the north 100 feet. Offices also will be remodeled. Business is going on as usual during the alterations, which will take about 30 days to complete and will cost approximately \$1,000.

KANSAS

Logan, Kan.—The Logan Flour Mill, Henry Lohse owner, burned Nov. 4 at noon, caused by defective wiring. No insurance was carried. The mill was built more than 50 years ago.

Savonburg, Kan.—J. H. Viets and Elmer Price have bot the elevator at this point from George Johnson, receiver for the defunct Savonburg State Bank. The new owners plan to open for business in the near future.

Page, Kan.—The 40,000-bu. elevator of the Robinson Milling Co. burned during the night of Nov. 6, together with about 12,000 bus. of wheat; loss (exclusive of grain) estimated at \$10,000. The fire started in the cupola. The elevator was built by the Kansas Wheat Farming Co. and bot by the Robinson Milling Co. two years ago.

Leavenworth, Kan.—A movement is said to be on foot here looking toward the rebuilding of the Farmers National Grain Corp.'s elevator that was destroyed by fire last summer. The co-operation of U. S. Senator Arthur Capper was sought and he is reported to have said that if financial aid was necessary he would endeavor to help in securing funds from the Federal Government's farm credit administration.

Kansas City, Kan.—The board of city commissioners has announced that bids would be received on Dec. 1 on approximately a third of a million dollars' worth of machinery and equipment for the 3,000,000-bu. municipal elevator under construction here. The state PWA director has approved plans and specifications on the elevator machinery and equipment submitted by Horner & Wyatt, who designed the elevator, and the city commissioners accepted them.

Moundridge, Kan.—The Farmers Grain Co. has awarded contract to Chalmers & Borton for the immediate construction of a 20,000-bu. short studded, frame, iron clad elevator, having concrete driveway and work-room floor. The equipment will include a 2,000-bu. leg, 8-bu. Richardson Automatic Scale, Ehrsam Head Drive and Ehrsam Overhead Truck Lift driven with Fairbanks-Morse Motors. The present elevator will be dismantled and the new elevator will be completed by Jan. 1.

Dodge City, Kan.—The Kansas Grain, Feed & Seed Dealers Ass'n has received the following new members, making 199 received since June 15: Farmers Elevtr. Co., Abilene; Hogan Milling Co., Junction City; Cimarron Co-op. Equity Exchange, Cimarron; Pawnee Co. Co-op. Ass'n, Larned; Farmers Co-op. Grain & Supply Co., Burdett; C. M. Alspach, Kerwin; H. M. Crosby, St. Francis; Farmers Co-op. Ass'n, Brewster; St. Francis Milling Co., St. Francis; Bird City Equity Merc. Exchange, Bird City; Oberlin Milling Co., Oberlin; Uscar Urbom, McDonald.

KENTUCKY

Paducah, Ky.—Ed. C. Hawkins recently added a Kelly Duplex Vertical Feed Mixer to his feed mill equipment. The machine is motor driven, one-ton capacity, noiseless in operation and has floor level feed.

MICHIGAN

Maybee, Mich.—S. Liedel & Son are installing a Kelly Duplex Hammer Mill.

Yale, Mich.—The Yale Elevtr. Co. has increased its capital stock from \$20,000 to \$40,000.

Monroe, Mich.—Amendt Milling Co. has installed two Sidney Electric Truck Hoists, and a Sidney Hammer Mill Feeder.

Copemish, Mich.—The Copemish Elevtr. Co. has added a new office and salesroom, 20x20 feet, adjoining its elevator building.

Howard City, Mich.—An addition, 16x32 feet, in which will be housed a hammer mill, is being built to the feed store of Harry Oppen.

Ludington, Mich.—The Pere Marquette Railway Co.'s elevator, idle for the past two and a half years, is being wrecked. It was built in 1899.

Battle Creek, Mich.—A. K. Zinn & Co. have recently installed a new Kelly Duplex Ear Corn Crusher and Feeder ahead of their hammer mill, to provide a uniform feed.

Atlas, Mich.—The 100-year-old mill on Kearsley Creek here, which has been in continuous service, has been purchased by William R. Endicott, of Flint, who will make repairs and operate the mill.

Edwardsburg, Mich.—The elevator here operated by the Wendt Grain Co. has just installed a feed mixer and has also improved its drying equipment by installing a direct heat furnace for its vertical driers.

Forest Hill, Mich.—The elevator at this point, until recently operated by Harry Hudson, of Shepherd, who died suddenly on Oct. 15, has been leased by the Central Michigan Co-op. Elevtr. Co., whose headquarters are at Alma, Mich.

Ashley, Mich.—The interior of the office at the Rockafellow Grain Co.'s elevator was wrecked early Sunday morning, Nov. 8, when robbers blew open the safe and escaped with about \$140 in cash. It was the second robbery at the elevator within six months. Entrance to the elevator was gained by prying off a padlock on the office door.

Colon, Mich.—The elevator of the Colon Elevtr. Co., which was reported in the Sept. 23 Journals as having filed bankruptcy schedules in federal court, was sold at auction on Nov. 4. Only three bidders were present at the sale and Fred Reynolds, of Centerville, was the high bidder, at \$4,500. Mr. Reynolds operates an elevator at Centerville and also at Three Rivers. He has appointed Charles Groth manager of the local house.

Elwell, Mich.—We are just completing a new feed mill. It is built next to the main elevator, has 8 bins, in which are stored cracked corn and other grains used in making mash, dairy feeds and scratch feed. The new equipment consists of a steel corn cutter, mixer for scratch feed, molasses processing machine, a bank of three elevator legs to carry the cracked corn to the bins above, and a hopper scale connected to the main elevator leg, which delivers to any bin, the grinder or scratch feed mixer.—Peoples Elevator Co., W. W. Bronson.

MINNESOTA

Delano, Minn.—Frank Adicks has recently installed a new Kelly Duplex Vertical Feed Mixer.

Crookston, Minn.—The C. Roe Grain Co. has added a Clow-Winter Percussion Type Metal and Stone Separator to its grinding room equipment.

Mankato, Minn.—Edward Krauthammer, former manager of the business of the local wholesale feed and flour house of the A. J. Pietrus Products Co., has bot the local branch.

Reading, Minn.—The Anderson Grain Co.'s elevator that burned recently, as reported in the Nov. 11 Journals, contained about 10,000 bus. of barley and oats at the time of the fire, some of which is being salvaged. The fire started in the cupola. Both building and contents were covered by insurance.

**HIGHER prices—cheap—
Her money—inflation?
No!—most commodities now
selling for every penny they
are worth. Cheaper money?
—a stepping stone to infla-
tion. And inflation?—dan-
gerous—deceitful—creeps
slowly upon us—ending in a
great orgy of speculation —
THEN—depression—trag-
edy—failures—suicides
—broken homes—confi-
dence gone. This never
should happen again in
America. More business?
Yes!—but builded around
prices safe and sane.**

LOWELL HOIT & CO.

Detroit Lakes, Minn.—The Detroit Elevtr. Co. has purchased a warehouse from the Soo Elevtr. Co. and moved it to a location near its own elevator. It will be used for the storage of feed and flour.

Redwood Falls, Minn.—The Farmers Elevtr. Co. is improving its grain handling equipment with the addition of a Clow-Winter Direct Connected Geared Head Drive and G. E. Motor, furnished by R. R. Howell & Co.

Hutchinson, Minn.—The Pacific Grain Co.'s new building to house a feed mill is about completed. The structure is two stories high and has a basement. It will house the office of the company, and the upper part will be filled with storage bins. All new machinery of the most modern kind is being installed for feed grinding and mixing.

DULUTH LETTER

Feeding needs are beginning to become more pressing, reflected in a good general demand.—F. G. C.

Specimens of Oriental art from the collections of the late G. G. Barnum, Sr., were added to the collection of the Children's Museum, Duluth.—F. G. C.

Canadian screenings have been arriving and being run thru elevators for transferring into cars and reshipped to various points of destination in southern and central states territory.—F. G. C.

Grain receipts in this market continue in small volume and indicate no promise of enlargement in the immediate or distant future. Premiums on cash grain have been lowered in spots, tho in the main steadiness featured.—F. G. C.

The Canadian freighter, Thordoc, Captain Morris in command, cleared the Duluth harbor, Nov. 17, for Fort William, Canada, to load flour for winter storage at Halifax, Canadian Atlantic port. The voyage from the Great Lakes to the Atlantic port will be between 2,400 to 2,500 miles.—F. G. C.

**Michigan Headquarters
Elevator Equipment and Supplies**

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**Official Brown-Duvel
MOISTURE TESTERS**

and a complete line of grain and seed testing equipment. Every item guaranteed up to government specifications.

HARRY B. OLSON

ASHLAND BLOCK

CHICAGO, ILL.

Several grain firms have changed office quarters in the Board of Trade Bldg. of late. The Harbison Grain Co. moved from 601 to 505, Ely Salyards & Co., 418 to 503, and Hallet & Carey Co., 417-19 to 501, in all cases to secure more suitable features and room.—F. G. C.

MINNEAPOLIS LETTER

W. J. Herrmann and J. E. Coolbroth have formed the H-C Brokerage Co., which has opened offices in the McKnight Bldg., and will handle commercial feeds and concentrates, flour specialty foods, etc.

The entire tenth floor of the Minneapolis Chamber of Commerce Annex has been leased by the Kellogg Grain & Elvtr. Corp. and the Spencer Kellogg & Sons Sales Corp., which are now settled in their new quarters.

In an effort to head off gangrene infection, resulting from diabetes, T. H. Chambers, retired grain man, submitted to a second operation, on Nov. 11, his right leg being amputated at the thigh. At last report Mr. Chambers was doing as well as could be expected.

The strike at the Pillsbury Flour Mills Co.'s Mill "A," reported in the Journals last number, ended on Nov. 12, when the mill re-opened following settlement of labor disagreements between the company and union workers. All matters in dispute were settled satisfactorily, it was reported.

The Chamber of Commerce decided to change its operating hours to conform with those of the Chicago Board of Trade, recently changed when that city returned to central standard time. The new hours of the local exchange are as follows, effective Nov. 16: From 9:30 a. m. to 1:15 p. m., except on Saturdays, when the closing hour is 12 noon.

MISSOURI

Bonne Terre, Mo.—The property of Moran Bros. was totally destroyed by fire of undetermined origin on Nov. 9.

Springfield, Mo.—Fire reported as having been caused by backfire in engine room, damaged the mill plant of the Colorado Milling & Elvtr. Co. on Nov. 8.

Kansas City, Mo.—Henry Lichtig & Co. is a new firm in the grain and millfeed business, having offices in the Board of Trade Bldg., and headed by Henry Lichtig, who has re-entered the business. The millfeed department is in the charge of Earl Hogan.

Charleston, Mo.—The loss sustained by W. R. McCracken, who operated as the Mississippi County Cotton & Grain Co., in the recent burning of his elevator was estimated at approximately \$50,000; covered by insurance. About 30,000 bus. of grain and 50 tons of cotton were destroyed also. The elevator will be replaced with a modern concrete structure, equipped with the latest machinery, at an early date.

MONTANA

Bozeman, Mont.—The Swanson Feed & Fuel Co. is adding a Howell Roll Type Corn Cracker to its mechanical equipment.

Hilger, Mont.—The elevator at this point has been closed and Manager C. E. Danielson has gone to Great Falls to spend the winter.

Sidney, Mont.—A new building has been constructed by the Northland Seed Co. and a molasses feed mill installed for the manufacture of molasses feeds.

Hinsdale, Mont.—The local elevator of the Farmers National Grain Corp. was closed last month for the winter season, at least. In the event of a crop next year, it may re-open. J. C. Geil was manager. The Imperial Elvtr. Co. will continue to keep its elevator open, with T. O. Pritchard as manager.

Williams, Mont.—The Montana Central and the Rocky Mountain elevators, that were burned recently, as reported in the October 28 Journals, will be rebuilt in the spring, it is reported, both of them to have a capacity of about 25,000 bus. Most of the 40,000 bus. of grain damaged in the fire was salvaged for feed.

NEBRASKA

Exeter, Neb.—The Exeter Elvtr. Co. has bot the Kistler garage here and is continuing Mr. Kistler as manager of it.

Dubois, Neb.—Ernest Dobrovolny has been appointed manager of W. H. Hilt & Co.'s elevator, succeeding Elmer Hunzeker.

Tecumseh, Neb.—R. R. Gilmore, Gilmore Mill & Elvtr. Co., has added a new room to the mill to take care of increasing business.—R. E. H.

Smartsville (St. Marys p. o.), Neb.—John Schmidt, of Sterling, Neb., is the new manager of the Farmers Union Co.'s elevator here.—R. E. Harrington.

Tecumseh, Neb.—R. E. Harrington, traveling representative for the Geiger Grain Co., has moved to this city and opened a branch office here for the Geiger Co.

York, Neb.—The Farmers Elvtr. Co. is improving its elevating equipment with the addition of a Clow-Winter Direct-Connected Geared Head Drive. E. H. Cramer is making the installation.

Omaha, Neb.—The struggle on truck legislation is in the offing. Tentative bills covering different phases of the question are being drawn up and will be put into the legislative hopper in January.—J. N. Campbell, sec'y, Nebraska Grain Dealers Ass'n.

Omaha, Neb.—New officers of the Omaha Grain Exchange, elected Nov. 17, are as follows: Pres., Joel H. Wright, Jr.; first vice-pres., J. H. Weaver; second vice-pres., R. E. Miller; treas., Frank C. Bell. The new board of directors is made up of the officers and the following: J. T. Buchanan, B. O. Holmquist, W. J. Hynes, Jr., J. A. Linderholm, J. L. Welsh. Frank P. Manchester, who has been sec'y of the exchange for 28 years, was re-elected to that office.

Omaha, Neb.—Joel H. Wright, Jr., pres. of the Nebraska-Iowa Grain Co., who was recently elected pres. of the Omaha Grain Exchange, has been engaged in the grain business in this city for 28 years, having devoted his entire business career to grain. The Nebraska-Iowa Grain Co. was organized in 1903, and after a number of years of rather hectic times, Mr. Wright's services were engaged to re-organize the company, of which he has now been pres. for 12 years. He has been active in civic affairs of this city as well as some out-state. He has always participated in the activities of the Omaha Grain Exchange and has been a director for the past six years.

York, Neb.—We have just completed our elevator and feed plant here, replacing the plant that burned July 2. The elevator is of cribbed construction, 25,000 bus. capacity. The feed mill is 18x24, with hammer mill and molasses tank in basement, Haynes Batch Mixer and Anglo-American Molasses Mixer on first floor, corn cutter and cornmeal scalper on second floor. We have one warehouse 16x40 and one 16x72. We do a general grain and feed business, specializing in poultry feeds. Our opening, on Oct. 26, in which we co-operated with the county agent in a feeders' meeting, was very successful, with an attendance of about 300.—York Milling & Elvtr. Co., by H. Q. Banta. [A description of this new plant appeared in the Aug. 26 Journals. E. H. Cramer had the construction contract.]

NEW YORK

Deposit, N. Y.—A hammer mill has been installed by the Delaware Mills here.

Cortland, N. Y.—The Cortland Coal Co., recently installed a new motor-driven Kelly Duplex Vertical Feed Mixer. The new machine has floor level feed and capacity of one ton.

Patterson, N. Y.—A new building is being added to the plant of the Eaton Kelley Co., to be occupied by the offices of the firm, one section being used as a general storage room and garage.

Buffalo, N. Y.—A chemical laboratory for research work on the use of soybean oil and by-products has been completed by Spencer Kellogg & Sons, Inc., at their local plant.

Syracuse, N. Y.—His new firm, the Sturdy Dog Food Co., is now occupying all the attention of William Crull, who was the representative in central New York for many years for the Quaker Oats Co., from which company he recently resigned.

Rochester, N. Y.—The Van Vechten Milling Co., makers of white and rye flours, the last of many mills that once prospered in this city, has had involuntary bankruptcy proceedings filed against it. The total claims listed by the three firms signing the petition were \$31,405.

Buffalo, N. Y.—The report of Spencer Kellogg & Sons, Inc., for the fiscal year ending Aug. 29 showed total assets of \$23,529,907 compared with \$19,715,918 for the preceding year. Net income for the year was \$1,310,850, or \$2.62 a share, compared with \$1,112,395, or \$2.22 a share the preceding year.

Brooklyn, N. Y.—Alfred Milton Voorhees, for many years sec'y-treas. of the W. K. Voorhees Grain Co., and who retired 10 years ago, died at his home in this city on Nov. 2, after an illness of four weeks. Mr. Voorhees, who was 68 years of age, was a member of an old Dutch family which came to Long Island in the 17th century.

Catskill, N. Y.—The old four-story grist mill here, which has not been in use for many years, has been leased for 10 years by Louis Abrams, who will be chief mechanic at the mill, and his son, Joseph, who will be manager. The mill has been renovated and \$15,000 of machinery installed. Feed, breakfast food and buckwheat flour are manufactured, seven men being employed at present, more to be added later. Business is conducted under the name of the Suburban Grist Mill.

NEW YORK CITY LETTER

Clarence F. Gregory, a member of the Produce Exchange, died Nov. 7.

Members of the Produce Exchange held a meeting recently to discuss the advisability of resuming security trading.

The mother of William C. Rossman, sec'y of the Produce Exchange, died at her home in Brooklyn on Nov. 12. Interment was at Chambersburg, Pa.

Paul Whitman, grain and millfeed broker, is making good recovery from a recent operation at Mt. Sinai hospital. During his enforced absence, the business is being taken care of by his partner, Irving Horowitz.

NORTH DAKOTA

Powell, N. D.—The Hubert Grain Co. recently sustained wind damage to its elevator.

Hamberg, N. D.—The Farmers Elvtr. Co.'s elevator, Harry Dunham manager, burned early this month.

Grand Forks, N. D.—The Carter Elvtr. Co., of Lisbon, N. D., became a member of the North Dakota Farmers Grain Dealers Ass'n last month.

Grand Forks, N. D.—Recently elected officers of the Grand Forks Terminal Elvtr. Co. are: Pres., Henry Holt; vice-pres., Gus Gunderson; sec'y, R. F. Larsen; treas., Charles Dow.

Grand Forks, N. D.—The State Mill & Elvtr. recently placed an order with R. R. Howell & Co. for a Jacobson Universal Hammer Mill with 75-h. p. motor, and a large Fox Cutter. This is the second Universal unit to be installed by the State Mill this year.

OHIO

Zanesville, O.—The Hook-Aston Milling Co. recently sustained wind damage to its plant.

Bellevue, O.—A separator was included in some new equipment recently installed in the elevator of Irvin T. Fangbner & Co.

Donnelsville, O.—Valley Grain Co. has purchased a one-ton Kwik-Mix Feed Mixer, manufactured by the Sidney Grain Mch'y. Co.

Dunbridge, O.—Central Mills, the incorporation of which was reported in the Oct. 14 Journals, plans establishment of an alfalfa meal plant here.

Cincinnati, O.—The Early & Daniel Co. is reported as contemplating the erection of an addition to its elevator, doubling its capacity, bringing it up to 2,000,000 bus.

RATS DRINK



RAT-CIDE

A rat poison especially effective for mill and grain warehouses where rats have lots to eat but little to drink.

Write for literature and prices.

THE WEEVIL-CIDE COMPANY
1408 W. 9TH ST. KANSAS CITY, MO.

Mansfield, O.—Edward R. Robinson has been appointed temporary receiver for the Hoover Milling Co., pending disposal of a court action seeking dissolution of the company.

Marysville, O.—Spurrier Bros., operating a 30,000-bu. elevator and a flour mill under the name of the Marysville Flouring Mills, have installed a new corn shelling machine.

Trotwood, O.—Harley Ullery is completing the installation of a new Kelly Duplex Vertical Feed Mixer, with motor drive, in his elevator. The machine has floor level feed and capacity of one ton.

Monroeville, O.—The Seaman-McLean Co. has had a new dust bin constructed at the rear of its elevator. The company is considering plans for a new warehouse for building materials and supplies.

Mt. Sterling, O.—The Teegarden-Cook Grain Co. is installing new feed mill equipment, consisting of a Kelly Duplex Feed Mixer, Hammer Mill, Crusher-Feeder and Drag. The installation is being done by the Duplex Mill & Mfg. Co.

Mortimer (Findlay p. o.), O.—The 8,000-bu. elevator of the North Baltimore Grain Co. burned on Nov. 12, with 3,000 bu. of grain; loss, \$15,000; insured. A short circuit in a motor, or possibly a hot bearing, caused the fire. The office building and equipment did not burn.

Trotwood, O.—Trotwood Farmers Exchange has installed another lot of new equipment at the new 50,000-bu. elevator, the latest addition being a freight elevator, a large Fairbanks Scale, a large platform scale, a combined corn and grain cleaner and an automatic scale, all furnished by the Sidney Grain Mch. Co.

McComb, O.—The Northwest Ohio Farmers Grain Dealers Ass'n met on the evening of Nov. 2 in the basement of the M. E. Church here, as the guests of the McComb Farmers Elvtr. Co., about 100 members and their wives being present. During the serving of the chicken dinner some musical numbers were rendered, following which the meeting was held, presided over by the pres. of the ass'n, Orville Badertscher. After the address of welcome and the response, Mr. Woodman discussed "The New Corn Crop," after which came reports from different parts of the district. Charles Latchaw gave a talk on "America, the Land of Opportunity." The next meeting of the ass'n will be held in Toledo.

OKLAHOMA

Oklahoma City, Okla.—R. A. Lester recently purchased a one-ton Sidney Special Mixer.

Gracemont, Okla.—The C. A. Downing Milling Co. has completed installation of a 30-h. p. electric hammer mill.

Kingfisher, Okla.—The mill plant of the Burrus Mill & Elvtr. Co., was damaged by fire of undetermined origin on Nov. 8.

Butler, Okla.—Fire at the Zobisch Grain Elvtr. on Nov. 5 was quickly brot under control, but the water did damage of about \$350. While fighting the fire, Paul Zobisch fell from a ladder and suffered slight injuries.

Nardin, Okla.—The Nardin Co-op. Ass'n is remodeling its elevator here. The cupola is to be torn off and ten feet added to the height of the main building. Three overhead bins are to be built over the driveway, and the entire building is to be covered with galvanized iron. New equipment will include a 10-h. p. motor, new leg and distributor and an automatic scale. The Van Ness Const. Co. has the contract.

PACIFIC NORTHWEST

Selah, Wash.—The Halley Feed Co. has installed a new feed mill and will now manufacture mixed feeds.

Murtaugh, Ida.—The Murtaugh Seed House is adding a large commercial type Howell Roller Feed Grinder to its plant equipment.

Creston, Wash.—The grain elevator and warehouse of the United Grain Growers, idle for several years, has been re-opened under new management, to help take care of the splendid grain crop in this vicinity.

Spokane, Wash.—The Spokane Grain Merchants Ass'n gave its 11th annual banquet complimentary to E. A. Pierce & Co. for the grain quotation service to dealers, at the Transportation Club on the evening of Nov. 10. About 150 attended.

Caldwell, Ida.—A 7,500-bu. corn crib is being completed by the Idaho Egg Producers, Southern Idaho Co-op. Marketing Ass'n, at this point, for the purpose of keeping as much of the Idaho corn as possible in Idaho.

Spokane, Wash.—C. R. Greely is the new pres. of the Spokane Grain Merchants Ass'n, W. R. Glover is vice-pres. and Richard H. Stephens sec'y-treas. Named to the board of trustees are Don Long, C. D. Kyle and Mr. Stephens.

Kittitas, Wash.—With their buildings completed and machinery installed, the Western Molasses Feed Co. is ready to begin operation of its feed plant as soon as the erection of power lines to its plant is completed by the local electric company.

Portland, Ore.—Negotiations are still in progress between the officials of the White Star Feeds, Inc., and the American Federation of Labor branch, Cereal Workers' Union. The union officials made demands for unionization of its employees. The Sunset Feed Mills are having a similar discussion. Demands include a 40-hour week, 67½ cents per hour minimum wage, one week's vacation each year with pay, preferential union hiring.—F. K. H.

Portland, Ore.—Regarding the longshoremen's strike, after Chief of Police Niles notified the International Longshoremen's Union that "the constituted authorities" have the right to issue orders such as the union had given out, that passes must be secured by all who wanted to go on the docks, the union rescinded its order. The union was issuing "special permits" for unloading corn from elevators to cars. Corn from the Argentine was tied up, with the operators trying to get a ruling that it was perishable cargo, which the unions stated they would unload.

PENNSYLVANIA

Washington, Pa.—Judson Wiley & Sons are installing a Kelly Duplex Feed Mixer. The machine is motor driven.

Bedford, Pa.—The new elevator and feed mixing plant built by the Bedford Feed Co. is nearing completion and will be in operation by Dec. 1.—L. T. Griffith, Griffith Grain Co.

SOUTH DAKOTA

Artesian, S. D.—J. Robert Peterson, manager of a grain elevator at this point, died recently in a hospital at Mitchell, at the age of 55 years.

SOUTHEAST

Laurel, Del.—The Poultry Supply Co. has recently installed a new Kelly Duplex Corn Cutter and Grader.

Spartanburg, S. C.—The Spartan Grain & Milling Co. is erecting a 30x112-foot, three-story frame warehouse, covered with metal, as an addition to its plant.

TENNESSEE

Memphis, Tenn.—Fire threatened the destruction of the Davis-Andrews Co.'s elevator here on Nov. 13, but by the quick action of the fire department was confined to a building adjoining the elevator used for manufacturing meal.

TEXAS

Dalhart, Tex.—The Mayfield Feed & Grain Co. is building a 100-foot extension to its elevator and feed plant, which will add 5,000 square feet of floor space.

Gainesville, Tex.—Fire reported as having been caused either by defective wiring in an automobile or a smoldering cigarette left in the seat of an automobile in the garage of the Whaley Mill & Elvtr. Co. destroyed the garage and six automobiles on Oct. 28.

UTAH

Logan, Utah.—The Central Milling Co. has repaired the fire damage reported in the October 14 Journals, and is again in operation, turning out feed and flour.

Salt Lake City, Utah.—The Snow White Feed Co. has been opened here by S. Rolio. The plant, which has a capacity of 35 carloads of feed, has 108x72-foot floor space, and consists of a feed mill and warehouse.

WISCONSIN

Beaver Dam, Wis.—The feed mill of Fred Stancer burned Nov. 17; loss, \$10,000; insured.

Boyd, Wis.—The Boyd Produce Co.'s mill has been bot by Roberts & Schuster, who will make improvements.

Mt. Horeb, Wis.—P. J. Dunlap has recently replaced his hammer mill with a new Kelly Duplex Hammer Mill.

Milwaukee, Wis.—Permit for the construction of a \$150,000 concrete grain elevator, 125 feet high, has been granted the Joseph Schlitz Brewing Co.

Shullsburg, Wis.—Repairs have been made to the Nethery Feed Mill, which was recently damaged by fire, as previously reported in the Journals.

Platteville, Wis.—Eibe Cordts, a pioneer grain and feed dealer at this point, died on Nov. 2 at his daughter's home in Montfort, Wis., at the age of 83 years.

Fenwood, Wis.—The Fenwood Feed Warehouse, Otto F. Untiedt, proprietor, is installing a new Kelly Duplex Vertical Feed Mixer, having floor level feed and capacity of one ton.

Milwaukee, Wis.—A new feed plant, of brick and concrete construction and covering 15,000 square feet, has been completed by the Plankinton Packing Co. The storage capacity of the new plant is 1,500 tons of feed. Livestock and poultry feed will be manufactured.

Rice Lake, Wis.—Archie A. Bergeron's elevator burned early in the morning of Nov. 20, with a total loss estimated at \$130,000. Insurance on building, \$12,000. The contents, consisting of grain, hay and other stock, was owned by Farm Service Stores, Inc., a subsidiary of General Mills.

Washington, D. C.—R. M. Evans, Laurens, Ia., has been appointed special assistant to Sec'y of Agriculture Henry A. Wallace. Evans, a 1913 graduate from Iowa State College, has been a Pocahontas county farmer and cattle raiser for the last 15 years.

RANDOLPH GRAIN DRIERS

ASK THE MAN WHO HAS ONE

THAT'S ALL

WRITE FOR CATALOGUE

O. W. RANDOLPH COMPANY

3917-21 IMLAY ST., TOLEDO, O., U. S. A.

Field Seeds

Tippecanoe City, O.—Saunders Seed Co. has bought a Sidney mill sheller.

Sarcoie, Mo.—R. K. Brown has purchased a standard Sidney seed cleaner.

Indianapolis, Ind.—October receipts of soybeans were 22,000 bus. and shipments were 9,800 bus.

St. Louis, Mo.—Julius Petersen, Sr., of J. Petersen Co., well known to the seed trade, died early this month.

Lebanon, Ind.—The Davis Seed Corp. is building a drying plant to handle 10,000 bus. of hybrid seed corn annually.

Dubuque, Ia.—The Dubuque Seed Co., a branch of the Northern Field Seeds Co., has purchased the four-story building which has been its home for the last several years.

Moscow—The "Yarovization Process," developed by Prof. Lysenko, is artificial sprouting of grain prior to sowing. The process is said to make the seedlings practically immune to drouth.

Manhattan, Kan.—Legislation to license seed dealers was advocated at a meeting of the seed council of the Kansas Grain, Feed & Seed Dealers Ass'n on Oct. 24, as a means of restricting the handling of field seeds to established dealers.

Petersburg, Ind.—Hybrid seed corn planted by the farmers of Pike county, for which they paid \$8 per bushel compared to \$1.50 for ordinary seed corn, has averaged 45 bus. to the acre, compared to 35 bus. to the acre for ordinary corn.—W.B.C.

Louisville, Ky.—A co-operative marketing ass'n has been formed in Fulton county for the disposition of the county's lespedeza crop. Scarcity of lespedeza in other sections of the country and the prospect of receiving higher prices prompted growers to organize.—A.W.W.

Minneapolis, Minn.—A second story is being added to the concrete and frame seed warehouse of the G. A. Haertel Feed & Seed Co. Construction is frame, covered with iron, and supplied with a built-up roof. Interior alterations are also being made by the contractor, T. E. Ibberson Co.

Springfield, Ill.—A new menace, the field bindweed (*convolvulus arvensis*), has appeared in 65 Illinois counties. On some farms it is retarding crop production. The plant spreads rapidly and eradication is difficult due to the deep roots and highly fertile seed. Contributing to the spread of the weed is the combine harvester in soybean fields, which makes a definite weed control plan necessary.

Maquoketa, Ia.—Lawrence Lahann is the manager of the new grain, feed and seed store opened here by F. Mueller & Sons Co. Altho no elevator facilities are maintained at this point the purchase and sale of grain will be one of the important divisions of the activities.

University Farm, Minn.—Corn breeding experiments by Minnesota's experiment station indicate significant differences in yielding ability in double crosses from different single cross parents produced from four inbred lines. The highest yielding double cross combination can be predicted from study of the single cross data.

Land devoted continuously to corn lost soil at the rate of about 60 tons a year per acre. Planted to bluegrass the annual rate of soil removal by erosion was cut down to the almost insignificant amount of 100 pounds an acre. The soil loss from corn land of the same slope and the same kind of soil was 1,192 times that from land sown to bluegrass.

Postville, Ia.—The latest addition to the elevator plant of Hall Robert's Son is a warehouse with storage capacity of 25 cars of seed, reconditioned from an old hotel building located across the street from the elevator. Built onto the warehouse is an addition equipped with new seed cleaning machinery, where cleaning of seeds will be carried on 24 hours a day from now until spring. This cleaning machinery supplements the cleaning plant in the elevator, also operating on a 24-hour a day basis, and doubles the company's capacity for seed cleaning. A new hammer mill and two mixing machines have just been added to the feed equipment of the company's mill, also.

Washington, D. C.—The drouth com'ite of the Department of Agriculture announced Nov. 20 that more than 2,650,000 bus. of seed grain have been purchased and conserved for resale next spring for planting purposes in Montana, Minnesota, North Dakota, and South Dakota, where seed supplies were either materially reduced, or virtually wiped out by 1936 drouth conditions. The seed is being procured for the present in the states of intended distribution. The program is a precautionary measure to reserve from milling or other commercial uses grain best suited for seed purposes. The seed is to be sold to farmers at a price based upon the cost. Under the program more than a million bushels of spring wheat, 250,000 bushels of durum wheat, a million bushels of oats, 250,000 bushels of flax, and 150,000 bushels of barley have been bought for seed purposes.

A fine mesh wire storage cage will keep out mice. If the corn is in a seed house, Dr. Porter advises starting a fire occasionally during the winter to keep down the moisture content of the seed.

Forced ventilation of hot air at a temperature of 100 to 110 degrees is the best method of drying seed corn.

Seedsmen's Meetings at Chicago

Seedsmen have several meetings scheduled for the Palmer House, Chicago, in January. Among them are:

Saturday, Jan. 23—Executive com'ite of the American Seed Trade Ass'n. Regular winter meeting to decide the time and place for the 1937 annual convention.

Sunday, Jan. 24—All-America Council to consider adoption of a constitution, and development of a permanent organization.

Monday, Jan. 25—Farm Seed Group of the American Seed Trade Ass'n. Regular winter meeting.

Many of the seedsmen who attend will also find interest in the National Canners Ass'n convention which starts in Chicago on Jan. 25.



WHAT PRICE VICTORY

By MARSHALL C. RUMSEY
Sole Distributor in the U. S. A.
of Original Svalof Seeds

In the issue of Nov. 11th I warned against buying seed oats by type only, and suggested that facts should be known. I told about The Svalof Plant Breeding Institute, their replacing selection by hybridisation and their method of distribution. I then described three leading varieties of white Svalof oats. If you have not read it do so.

Yield is important and there are other things. One is appearance, what the oat feeder really wants and will pay a premium for. The Judges at the International at Chicago have given a good answer to where the Victory oat stands in that. A second is the hull which should not be excessively heavy and yet not one which, though light, is tough. I have seen this, too, in some strongly pushed varieties. It can be told by their appearance when ground. A third thing is, what oat, stock do best on. Now, I have touched on something where scientists disagree. Some say there is a something in some oat varieties which makes horses do better on them than they do on other varieties. Others say there is nothing to it but a man with life-long experience with horses and in charge of a stable of State Troop horses once said to me, "There is no other oat that the State has furnished us with, that will bring our horses through in as fine shape as the Victory, and the horse tells the story best."

Svalof feels, and I agree with them, that seed further than 4 years from Original or very close work by someone thorough, is not seed. The close work required would cost more to do here unless in large volume, than the Original Seed costs. I do not know of anyone who wants to do it here. I have done a lot of seed work and prefer to have Svalof do it when they will. Three years from Original should bring a little premium and four should be competitive.

In buying feed oats it's a good hunch to have them come from towns where Svalof varieties are grown for seed. You may be sure these varieties are pretty generally grown. I do not know what you will pay for Victory or other Svalof varieties of seed oats one, two, three or four years from Original seed, but it is my opinion that they, in reality, will cost you or the sower nothing.

In issue of Dec. 9th there will be a list of growers of Svalof varieties of oats who use Original Svalof Seed for foundation stock in sufficient volume so they should have a quantity for shipment. Remember your jobber can select and buy them for you, but demand a certificate showing the grower, the number of years from original seed and identifying marks.

Original Svalof Seed is obtainable in the U. S. A. only through Marshall C. Rumsey, Batavia, N. Y.

Directory

Grass and Field Seed Dealers

CRAWFORDSVILLE, IND.
Crabbs, Reynolds, Taylor Co., clover, timothy.
GREEN SPRINGS, OHIO
The O & M Seed Co., seed merchants.
PAULDING, O.
Stoller's Seed House, wholesale field seeds.
ST. LOUIS, MO.
Mangelsdorf & Bro., Ed. F., wholesale field seeds.
Scott, T. Maurice, field seeds, carlot originator.
SAULT STE. MARIE, MICH.
Seo Terminal Co., grass, flax, peas.
SIOUX CITY, IOWA
Sioux City Seed Co., seed merchants.

Protect Seed Corn

Proper selection and drying of seed corn are the first two steps in securing good seed, the third is proper storage, says Dr. R. H. Porter, extension plant pathologist, Iowa State College.

Seed which is well dried and hung in a crib or dry place may absorb enough moisture from the air during the fall or winter so that dry rot molds develop. Development of dry rot will cause many dead or weakened kernels. If the moisture goes above 15% injury from freezing may result. Corn containing 15% moisture is injured when the temperature is lower than 5 degrees below zero. The safe policy is to store corn where the temperature stays above zero.

Southern Seed Ass'n Program

The Southern Seedsmen's Ass'n will hold its midwinter meeting at Nashville, Tenn., Hermitage hotel, Dec. 13-14. Reservations are to be made direct with the hotel. The tentative program is:

"Business," an address by Joel B. Fort, Nashville, Federal Reserve Bank.

"The Bell Case in Federal Court," a review by C. Bell.

"Soybeans," an address by Jacob Hartz, Stuttgart, Ark.

"The Robinson-Patman Act," in open discussion.

"Effect of Robinson-Patman Act on Price Differentials," by Lane Wilson, Shreveport, La.

Western Seedsmen to Meet in Kansas City

The annual fall meeting of the Western Seedsmen's Ass'n is scheduled for Dec. 5, at the Kansas Citian hotel, Kansas City, Mo.

The Ass'n will provide a noon luncheon, to be followed by the regular round table discussion of seed supplies and seed sales conditions. A morning session will open at 10 a. m.

Peppard Seed Co., and Rudy-Patrick Seed Co. will be hosts in the evening for visiting seedsmen, and provide the sumptuous annual banquet.

John W. Mathys, Minneapolis, is pres. of the organization, E. H. Sexauer, Brookings, S. D.,

Weevil Protection for Beans with Dust

H. O. Deay and J. M. Amos, reporting on a series of experiments with dust treatments for protecting beans from the bean weevil, said:

"Untreated navy beans were 54 per cent infested by bean weevils when exposed to their attack for 6 mos. Anderson clay, Dawson clay, Dutox, and dusting talc at all dilutions used gave perfect or nearly perfect protection to navy beans from infestation by the bean weevil. Hydrated lime was a little less efficient than the foregoing materials but still very effective at all dilutions used. Coal ashes prevented infestation at dilutions of 1:2 and 1:4 and allowed less than 0.5 per cent infestation at dilutions of 1:10 and 1:25.

"Wood ashes gave perfect protection at dilutions of 1:2 but allowed an infestation of 1 per cent or more at greater dilutions. Flour was ineffective at dilutions of greater than 1:2. It gave perfect protection at dilutions of 1:1 in preliminary tests.

"The protection afforded by the nonpoisonous dusts, especially at high dilutions, is definitely correlated with the adhesivity of the material. None of the materials used affected

the cooking quality or taste of the beans, but materials that adhered well and wrinkled the seed coat were much harder to remove by washing. None of the materials used affected germination of the beans."

An Insecticide for Bean Beetles

Baricide, a trade name for barium carbonate, sold as an insecticide for control of the Mexican bean beetle, was found in laboratory tests to be rather slowly fatal to the Mexican bean beetles and their larvae, according to the report of L. M. Peairs. Apparently this product fails to equal the best of the standard materials, such as magnesium arsenate and some of the fluosilicates, altho satisfactory control may follow its use in moderate infestations.

Baricide may be recommended where cost of material and amount of labor required are not important factors, and where poisonous residues are particularly objectionable.

Argentina Seeks Alfalfa Seed Market

The orange-red color used to stain 10 per cent of each lot of Argentine alfalfa seed imported into this country is so close to the red used on alfalfa seed that is prohibited because it is unadaptable to U. S. production that it might lead prospective buyers to think the Argentine seed unusable, pleaded the Argentine Ambassador before the State Department at Washington last month.

Give us a color less likely to be confused with the red of prohibited seed, he requested, and reduce the staining requirement from 10 to 1 per cent. The State Department referred the request to the Department of Agriculture.

Many Exhibits at Grain Show

Entries of corn, small grains, seeds and hay for the 18th annual International Grain & Hay Show, held in Chicago, in connection with the International Live Stock Exposition, Nov. 28-Dec. 5, inclusive, had come from 25 states, the provinces of Ontario, Alberta, British Columbia and Saskatchewan, and a number of Australian points well before the closing date for listing of exhibits.

The exposition's cash prize list covers more than 1,000 awards in 95 classes, and bonus prizes for winning exhibits grown within their borders have been offered by Ontario, Quebec, and Alberta. Special prizes to winning North Dakota growers are offered by the Greater North Dakota Ass'n.

Com'ites of well-known agronomists who will act as judges are as follows:

Corn com'ite: R. F. Crim, University of Minnesota, St. Paul; J. C. Hackleman, University of Illinois, Urbana; A. T. Wianko, Purdue University, Lafayette; and Marion Coppock, vice president of the Iowa Corn & Small Grain Growers' Ass'n, Ankeny.

Small grain com'ite: Clyde McKee, Montana State College, Bozeman; Dr. C. R. Megee, Michigan State College, East Lansing; A. L. Stone, Wisconsin College of Agriculture, Madi-

son, and James Laughland, Guelph, Ontario, Canada.

Grain sorghums: A. L. Clapp, Kansas State College, Manhattan, and Tom Reid, of State College, New Mexico.

Hay competition will be judged by George S. Bridge and H. H. Whiteside of Chicago.

The International Institute at Rome estimates world wheat production this year as the lowest since 1922.

Imports of Forage Plant Seeds

Imports of forage plant seeds during October and during the four months prior to Nov. 1, 1936, as reported by the Bureau of Plant Industry, have been as follows, in pounds:

	October 1936	1935	July 1 to Oct. 31 1936	1935
Alfalfa	294,200	.....	305,300	.....
Bluegrass, Canada	6,500	15,500	24,000	38,400
Brome, smooth	175,600	11,400	269,200	20,900
Clover, alsike	498,100	.....	765,500	.....
Clover, crimson	539,200	176,900	5,116,900	1,913,800
Clover, red	233,800	.....	480,100	.....
Clover, white	98,400	142,500	364,000	372,500
Grass, orchard	271,200	500	1,111,800	500
Rape, winter	179,800	27,900	6,388,600	213,700
Ryegrass, perennial	143,400	74,800	329,000	146,600
Timothy	28,300	.....	28,300	600
Vetch, hairy	1,020,400	843,400	1,805,200	1,352,400
Bentgrass .....	.....	2,000	1,200	15,500
Bluegrass, rough	60,000	61,300	84,300	79,300
Clover, suckling	17,100	39,200	28,100	41,200
Dogtail, crested	4,200	.....	6,600	10,000
Fescue, chewings	167,700	3,300	698,300	119,100
Fescue, other	200	21,200	47,500	23,800
Grass, Dallis	15,000	9,700	22,100	16,300
Grass, Sudan .....	.....	.....	.....	206,100
Medick, black	23,900	6,400	.....	29,100
Sweetclover, white	556,400	.....	831,100	.....
Sweetclover, yellow	32,200	.....	65,200	.....
Wheatgrass, crested	22,500	29,200	25,100
Wheatgrass, slender	25,500
Mixtures, grass	1,500

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Grain Carriers

Washington, D. C.—Car loadings of grain during the week ended Nov. 14 were 33,947, compared with 29,327 during the previous week and 29,132 during the comparable week a year ago. Grain loadings were up 15.8 per cent.

The Mobile & Ohio and other roads made effective Nov. 22 a rate of 20 cents per 100 pounds on imported corn moving thru Mobile and destined to Memphis. The 20 cent rate will equalize Mobile with New Orleans on this traffic.

Atchison, Kan.—The Atchison Milling Co. has filed with the I.C.C. complaint No. 27580 against the Chicago & Alton railroad, charging the railroad denied transit under the same conditions competitive mills at interior points are granted transit.

Buffalo, N. Y.—Altho from 20 to 40 freighters are normally tied up at the break-wall by the middle of November, loaded with wheat for winter storage, the same dates this year found no boats tied up, and only from 20 to 30 of them chartered. Last year the grain fleet held 75 vessels.

Chicago, Ill.—The hearing on the Northwestern application to western trunk lines for a 2½¢ rate on wheat originating at lower Missouri River crossings, with transit at Minneapolis, Minnesota Transfer and St. Paul, on traffic destined east, has been again postponed, from Nov. 18 to Dec. 1.

Fort Worth, Tex.—Southwestern railroads have decided to let Texas remain in Circular No. 33-B, which authorizes reduced rates on shipments of feed into the drouth counties of that state. The decision to continue the emergency rates was made by the western traffic executive com'te.

Chicago, Ill.—Grain shippers of the West and Southwest advocated inclusion of the general investigation Docket 17,000, Part 7-A, in the hearing on I. & S. No. 4208, southern grain rates. Discussion of dates and places of meeting, and of procedure and issues, were argued before Examiners Mackley and Hall of the I.C.C. early in November. Railroads opposed inclusion of the general investigation.

Chicago, Ill.—Preservation of private ownership in American industry was the theme of a 2-day meeting of the Transportation Ass'n of America, which opened at the Union League Club Nov. 16. The executive com'te formulated a program opposing government ownership of transportation and public service agencies, and the directors urged industry, agriculture and finance to join in upholding the principle of private enterprise.

Greensboro, N. C.—An injunction against the Colonial Motor Freight, a partnership, carrying general merchandise from Baltimore to High Point, N. C., has been obtained by the Bureau of Motor Carriers in the local U. S. district court. The terms of this injunction restrain the Colonial Motor Freight from continuing violations of its tariffs by charging and collecting less than the published rates, and by extending credit for more than 15 days.

Duluth, Minn.—With vessels handy and anxious to book cargoes the rate dropped. One cargo was reported taken as low as 2 cents to unload wheat at Buffalo. Clearing up of the congested situation and normal conditions again resumed resulted in a tightening up of boat offerings and consequent stiffening in freight rates, back to the 3-cent basis for wheat to move to Buffalo. The near approach of the close of navigation for this year has not brot about any undue rush to ship grain to the East. Eastern demand is not aggressive.—F.G.C.

A reduced rate of 34½ cents on imported flaxseed has been filed by the Illinois Central, Chicago Great Western, Gulf, Mobile & Northern, and the C., B. & Q., from gulf ports to Chicago, Minneapolis, and Red Wing. The Missouri Pacific followed with the same rate, including Des Moines, and the Northwestern, St. Paul, and Soo with a concurrence, including Milwaukee, Eau Claire and Chippewa Falls, effective Dec. 15. The Southern Ports Foreign Freight Com'te has docketed the following proposed rates on imported flaxseed: To Atchison, Kan., 28 cents; Council Bluffs, Ia., 30 cents; Fredonia, Kan., 28 cents; Kansas City, Mo.-Kan., 28 cents; Leavenworth, Kan., 28 cents; Lincoln, Neb., 30 cents; Nebraska City, Neb., 30 cents; Omaha, Neb., 30 cents; St. Joseph, Mo., 28 cents; South Omaha, Neb., 30 cents.

Portland, Ore.—In the suit of the Oregon-Washington Railroad & Navigation Co. against the Farmers National Grain Corp., Nov. 16, to collect \$17,782.96 in freight rates, Federal Judge Fee affirmed a decision by the federal court two years ago, that the 668 cars of wheat moving from interior Oregon points to terminal No. 4 in Portland were subject to intrastate rates, which are lower than the interstate rates. Shipment of the wheat to the Portland docks was not considered manifest evidence that the wheat would move into foreign trade.—F.K.H.

Rate Changes

Illinois Terminal Company's Supplement No. 5 to Tariff No. 1073, Ill. C. C. No. 339, effective Dec. 3, 1936, cancels rate on slop, distillers grain (grain, spent, wet) from Peoria to Decatur, Ill.—Investigation No. 7222.

L. E. Kipp, Agent's Supplement No. 47 to Tariff No. 332, Supplement No. 45 to Ill. C. C. No. 236 (R. A. Sperry, Agent's Ill. C. C. No. 147), effective Dec. 1, 1936, cancels proportional rate on grain and grain products from Chicago, Ill., to Peoria and Pekin, Ill., on the C. & I. M.—Investigation No. 7222.

Court Refuses to Halt Pick-up Service

Railroads in the east held gains they made by inauguration of pickup-and-delivery service when the District of Columbia federal court refused the request of the American Trucking Ass'n, Inc., for an injunction against the added rail service.

A 3-judge tribunal, composed of Justices D. Lawrence Groner of the District of Columbia Court of Appeals and Jennings Bailey and Alfred A. Wheat of the District federal court, heard and refused the plea of the truckers.

Eastern railroads started the pickup-and-delivery service Nov. 16. Most of the roads have instituted a system whereby the shipper calls the railroad, and the railroad notifies its truckmen to pickup the freight and carry it to the rail terminal.

Suits Against Trucks by I.C.C.

The Interstate Commerce Commission, thru its Bureau of Motor Carriers, has begun to take action against trucking companies who violate the new Motor Carrier Act.

Agents of the Commission have filed bills of information against two companies located at Dunmore, Pa., and Bridgeville, N. J., in the federal court at Scranton, Pa. The trucking companies are charged with collecting more than their published rates from certain shippers, and of charging "favored shippers" less than the published rate. Against one of these trucking companies are 92 counts; against the other, 58 counts.

The Motor Carrier Act provides a maximum fine of \$500 for the first offense and \$2,000 for each subsequent offense for charging less than the published rates.

Readjusted Ex-Lake Rates

Ex-lake rates on grain from Buffalo and other lake ports for export have been readjusted effective Dec. 1.

The new rates, ex-lake, domestic, Buffalo to Boston are 21.17 per 100 lbs. on wheat, 21.29 on corn and rye, 21.07 on oats, 21.58 on barley; to Rockland, Me., domestic, 23.17 on wheat, 23.29 on corn and rye, 24.13 on oats, 23.58 on barley; to New York, Philadelphia and Baltimore, domestic, 18.67 on wheat, 18.79 on corn and rye, 20.13 on oats, 19.08 on barley; to Boston, New York and Norfolk, export, 10.83 on wheat, 10.95 on corn and rye, 12.29 on oats, 12.74 on barley; to Philadelphia and Baltimore, export, 10.33 on wheat, 10.45 on corn and rye, 11.79 on oats, and 12.24 on barley.

The ex-lake Buffalo rates include charge of not exceeding 1c per bu. made by the elevators for elevation and transfer from lake vessels to cars, including 5 days storage. Soy beans for export take the wheat rates.

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Feedstuffs

San Francisco, Cal.—October receipts of bran were 150 tons and of hay 180 tons, compared with bran 260 tons and hay 144 tons, in October, 1935.

Peoria, Ill.—October receipts of soybeans were 200 cars, of millfeed 10,710 tons and of hay 450 tons, compared with soybeans 387 cars, millfeed 12,280 tons and hay 30 tons, in October, 1935. Shipments for the same period were: Millfeed 12,840 tons, compared with 13,623 tons in October, 1935.

St. Louis, Mo.—October receipts of soybeans were 60,800 bus., of kafir 5,600 and of hay 480 tons, compared with soybeans 458,100 bus., kafir 23,800, and hay 456 tons, in October, 1935. Shipments during the same period were: Kafir 21,355 bus. and of hay 156 tons, compared with soybeans 3,000 bus., kafir 8,600 and hay 240 tons, in October, 1935.

Washington, D. C.—Alfalfa meal output during October of only 16,250 tons was about half the large output for August and September. Production June thru October of 129,660 tons, however, was much above that for the corresponding period of the past five years. Production for the five months amounted to only 101,450 tons last year and 102,510 tons two years ago.—Buro of Agricultural Economics.

Washington, D. C.—Distillers dried grains output during October of 20,620 tons was about 2,500 tons larger than during September. Output of the mills reporting for October last year totaled 12,300 tons compared with their output a year ago of 12,220 tons. October, 1936, productions of the mills which began reporting for the first time this year totaled 8,320 tons. Shipments during October aggregated 20,520 tons leaving stocks of 1,250 tons at the end of the month.—Buro of Agricultural Economics.

Feed Prices

The following table shows the closing bid price each week for January futures of standard bran and gray shorts, spot cottonseed meal, soybean oil meal and alfalfa meal, in dollars per ton, and No. 2 yellow corn and No. 2 yellow soybeans in cents per bushel:

Minneapolis Spot		Kansas City	
Bran	Midls.	Bran	Shorts
Sept. 19.....	23.50	26.50	23.50
Sept. 26.....	23.50	26.00	23.75
Oct. 3.....	23.50	26.00	23.90
Oct. 10.....	25.00	28.00	25.00
Oct. 17.....	26.00	31.00	25.20
Oct. 24.....	26.00	31.00	25.55
Oct. 31.....	28.00	33.50	26.25
Nov. 7.....	28.50	33.00	28.00
Nov. 14.....	29.50	34.50	28.35
Nov. 21.....	31.50	35.50	28.60
St. Louis		Chicago Soy-	
Bran	Shorts	Beans	Meal
Sept. 19.....	25.00	27.50	1.19
Sept. 26.....	25.25	28.00	1.13½
Oct. 3.....	25.25	28.00	1.20
Oct. 10.....	26.75	29.25	1.26
Oct. 17.....	26.90	29.50	1.29¼
Oct. 24.....	27.65	29.25	1.25½
Oct. 31.....	27.75	29.75	1.22½
Nov. 7.....	30.00	32.50	1.24½
Nov. 14.....	29.90	32.25	1.26¼
Nov. 21.....	30.50	33.25	1.33¼
Cottonseed Meal		Denver	
Ft. Worth	Memphis	Alfalfa	Corn
Sept. 19.....	35.00	32.50	28.00
Sept. 26.....	35.00	29.50	27.00
Oct. 3.....	35.00	29.50	28.00
Oct. 10.....	35.00	29.50	28.00
Oct. 17.....	35.00	29.50	28.00
Oct. 24.....	34.00	29.50	28.00
Oct. 31.....	34.00	31.00	28.00
Nov. 7.....	34.00	32.00	28.00
Nov. 14.....	35.00	32.00	28.00
Nov. 21.....	36.00	33.00	28.00

Ft. Wayne, Ind.—Feed dealers from 5 states to the number of 847 thronged the Community Center Nov. 12 and listened to talks on feed merchandising by D. W. McMillen, Roy N. Hall and Robert P. O'Brien. Mr. McMillen spoke of changing conditions in the feed business and outlined progress that had been made in the past eighteen months. He pointed out that it was the wide-awake merchant who today was making real money, while the old fashioned elevator man who sat by the stove and waited for business was seeing it pass right by his door. The morning was devoted to inspection of the feed plant and soybean processing plant at Decatur, Ind.

Adulterations and Misbrandings

Perkins Oil Co., Memphis, Tenn., pleaded guilty and suffered a \$50 fine for interstate shipment of cottonseed meal that contained less protein and more crude fiber than the percentages represented on the label. The meal was shipped from Texas into Maryland on or about Jan. 28, 1933. The label called for 43% protein and not more than 10% fiber.

The Fairchild Milling Co., Cleveland, O., was fined \$100 and costs in a case involving shipment of various lots of wheat bran from Ohio to several points in Maryland, Pennsylvania, and Atlantic States, on or about Aug. 29 and 30 and Oct. 25, 1933. The tags on the shipments declared "Atlantic States Bran Made From Cleaned Wheat * * * Manufactured for Eastern Grain Growers Hagerstown, Md." Adulteration was alleged because the bran contained an admixture of screenings and scourings.

Southland Cotton Oil Co., Waxahachie, Tex., pleaded guilty and was fined \$625 for shipment of quantities of cottonseed meal and cake from Texas into Kansas on or about Aug. 7 and 29, Oct. 26, Dec. 6, and Dec. 29, 1934. The article was labeled, variously, in part: "Prime Cotton Seed Cake and Meal * * * Louis Tobian & Co."; "Guaranteed Analysis Protein not less than 43% * * * Manufactured for Kansas City Cake and Meal Co."; "43% Protein Cottonseed Cake or Meal Prime Quality Manufactured by Southland Cotton Oil Co. Waxahachie, Texas Guaranteed Analysis: Crude Protein (not less than) 43%." The protein content was lower than the declarations on the labels.

George D. Miller, Cedar Falls, Ia., pleaded guilty and was fined \$10 and costs for interstate shipment of two lots of a product represented to be yeast, on or about Jan. 23 and Jan. 24, 1933, from Iowa into Colorado and Wisconsin, respectively. The statements "Nu-Vita-Yeast," and "Nu-Vita Stock Yeast, The Utmost in Feeding Value for Livestock and Poultry," appeared on the labels of both shipments. A pink card with one lot declared "Nu-Vita-Yeast is a pure, unadulterated bacteria product free from any foreign materials or ingredients." A white card with one

lot also claimed the article was effective as a treatment, remedy, and cure for white diarrhea, coccidiosis in poultry, and necro and scours in swine. The product was composed principally of corn meal, prepared in imitation of a product composed essentially of yeast. Examination showed about 1% of yeast.

Crude Protein Fraction of Fish Meal and Meat Meals

W. L. Davies in the Analyst points out that the approximate analyses of meat meals is usually based on the assumption that no carbohydrate is present, and the "nitrogen-free extract" is not included in the results. Each constituent is determined, and it is often difficult to make the summation equal 100%. It is thought that the discrepancy arises from the false value given for the "crude protein" by multiplying the percentage of nitrogen by 6.25. The percentage of N in the nitrogenous compounds may be less than 16 and is not a constituent from meal to meal.

The "crude protein" of various meals was separated into true-protein and nonprotein-N fractions. It was found that the factor by which the total nitrogen has to be multiplied to give the true crude protein value varies from 6.54 to 8.00. A change of the factor 6.25 appears, however, out of the question. Meat by-products are of such variable composition that it is futile to suggest a new factor or to adjust the factor with reference to the non-protein-N content.

A bill for a commodity dollar will be introduced by him, Senator Thomas of Oklahoma said Nov. 19.

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Artificial Drying Preserves Vitamin in Alfalfa

Carotene in alfalfa was preserved practically intact when the hay was vacuum dried, says H. R. Guilbert, reporting experiments at the California experiment station in cooperation with the U. S. Department of Agriculture to determine the degree of carotene destruction that followed various methods of handling alfalfa hay or meal.

When fresh alfalfa was sun-dried, or when dried alfalfa was exposed to either direct sunlight, or sunlight filtered thru ordinary glass, very rapid destruction of the carotene took place. Marked losses also followed autoclaving, which destroyed the enzymes, but failed to check the loss of the carotene, or vitamin A value, when the hay was later sun-dried.

Under unfavorable drying conditions the enzyme action was found to cause extensive destruction of the carotene. High temperatures likewise had a deleterious effect. Storage of alfalfa for eight weeks at from 5 degrees below to 5 degrees above zero, centigrade, showed no appreciable loss of carotene, while at 20 to 30 degrees above 30% losses occurred, and only nine days of storage at 60 and 80 degrees gave 62% and 87% losses in the carotene content, respectively. Large losses in both dehydrated and sun-cured alfalfa meal followed storage in a warehouse during hot weather.

The carotene content of the original hay and the conditions under which it is stored must be considered when working out a method of handling.

Suggested Rations for Milking Cows

The Ohio State University suggests the following grain mixtures for milking cows, quantities stated in pounds, when alfalfa, sweet clover, soybean hay, or pasture is fed with or without silage:

No. 1. Digestible protein 12.2 per cent

300 corn or corn-and-cob meal or hominy or barley
200 ground oats
100 wheat bran
50 cottonseed meal
50 linseed oil meal or ground soybeans

No. 2. Digestible protein 12.1 per cent

200 corn or corn-and-cob meal or hominy or barley or wheat ground
100 ground oats
100 wheat bran
50 gluten feed
50 cottonseed meal or oil meal

No. 3. Digestible protein 12.4 per cent

100 corn or corn-on-cob meal or hominy
100 of ground barley or wheat ground
100 ground oats
100 wheat bran
50 cottonseed meal or ground soybeans

When red, alsike, or mammoth clover is fed with or without silage, the following grain mixtures are suggested:

No. 4. Digestible protein 13.6 per cent

400 corn or corn-on-cob meal or hominy or barley
200 ground oats or wheat bran
100 linseed oil meal or soybean oil meal
50 cottonseed meal

No. 5. Digestible protein 13.2 per cent

200 corn or corn-on-cob meal or hominy
100 ground wheat
200 ground oats
50 cottonseed meal
50 soybean oil meal

No. 6. Digestible protein 14 per cent

400 corn or corn-and-cob meal or hominy
200 ground oats
100 wheat brand
100 gluten feed
150 cottonseed meal or soybean oil meal

When mixed hay is fed with or without silage, the following grain mixtures are suggested:

No. 7. Digestible protein 15.7 per cent

400 corn or corn-and-cob meal or hominy
200 ground oats or bran
100 linseed oil meal or soybean oil meal
100 cottonseed meal

No. 8. Digestible protein 15.4 per cent

300 corn or corn-and-cob meal or hominy
200 ground oats

200 wheat
100 gluten feed
100 cottonseed meal
100 soybean oil meal

No. 9. Digestible protein 14.7 per cent

300 corn or corn-and-cob meal or hominy
200 ground barley
300 ground oats
100 wheat bran
100 gluten feed
100 cottonseed meal
100 soybean oil meal

Tankage at the Iowa Experiment Station

By EDWARD N. WENTWORTH

During the last two years the Iowa Experiment Station at Ames has been conducting research into feeding cattle with tankage, making comparisons with the standard protein supplement of linseed meal which for two centuries has been considered optimum protein ingredient for the beef cattle ration.

The test was arranged so as to compare dry rendered tankage, wet rendered tankage and soybean oil meal with linseed meal. A check lot was given shelled corn (full fed twice daily by hand), linseed oil meal (fed twice daily and spread on the corn ensilage in the amounts of one pound daily for the first ten days and one and a half pounds thereafter), corn silage (full fed twice daily), alfalfa (fed in the evening), block salt (self fed) mineral mixture composed of 50 per cent bone meal, 48 per cent raw ground limestone, 2 per cent iron oxide with traces of copper sulphate and potassium iodide (fed twice daily on the ensilage).

The second lot was given the same ration as the first, except that it received comparable amounts of a 65 per cent protein dry rendered tankage; and the third lot was given this tankage supplement for the first 150 days followed by linseed oil meal for the last 90 days.

The fourth lot was given a proportionate quantity of wet rendered tankage containing 60 per cent of protein throughout the test, while the fifth lot received the wet rendered tankage for 150 days and linseed oil meal for the last 90 days.

The sixth lot was given comparable amounts of soybean oil meal made by the expeller process in place of the linseed oil meal; and the seventh lot was given the soybean oil meal for 150 days and the linseed oil meal for the last 90 days. The eighth lot was given soybean oil meal from

which the oil had been removed by chemical solvents.

The accompanying table gives the feed cost per 100 lbs., and the average daily gain:

I	II	III	IV
Linseed Oilmeal	Tankage Dry Rendered	D. R. Tankage Later Oilmeal	Tankage Wet Rendered
\$7.82	\$8.05	\$8.33	\$8.16
2.31 lbs.	2.20 lbs.	2.20 lbs.	2.19 lbs.
V	VI	VII	VIII
W. R. Tankage Later Oilmeal	Soybean Oilmeal Expeller	Soybean Oilmeal Later Linseed Oilmeal	Soybean Oilmeal Solvent
\$8.05	\$7.72	\$8.03	\$7.89
2.27 lbs.	2.22 lbs.	2.15 lbs.	2.11 lbs.

Feeding Damaged Corn Fodder

Much corn fodder was damaged by the October rains in Indiana. This forage is reported to be very dark and much of it moldy and rotten. And many farmers are asking the question, "Is this damaged fodder safe to feed horses and cattle?"

"Rotten feed can not be considered a safe feed for livestock, especially horses," warned Dr. R. A. Craig of the veterinary department of Purdue. "Cattle seem to be able to handle roughage damaged by molds and rot better than any other livestock."

"If, however, it becomes necessary to use this class of roughage for livestock feed this winter," Dr. Craig advised, "it is advisable to feed it liberally so that the animals will not become so hungry as to eat the badly damaged or rotten part of it."

Trucks are hauling corn from Holgate, Ohio, to Omaha, Neb.

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The Sidney Grain Machinery Co.
Sidney, Ohio



More Roughage and Less Grain Give Cheaper Gains in Cattle Feeding

By A. D. JACKSON, of Texas Agricultural
Exp. Station

In feeding experiments at the Balmorhea Station designed to find the best methods of utilizing the feeding stuffs characteristic of the area, yearling steers on a limited grain ration made 30 pounds more gain on a ration that was less expensive by 17 per cent than similar steers on a full grain ration. The low grain lots were fed 42 days longer and used 18 per cent more total pounds of feed, but due to the high percentage of roughage and low percentage of grain, this considerable saving in cost of feed resulted. The roughage grown in the locality consisted of hegari fodder carrying 20 per cent grain and the grain was threshed milo that had to be shipped in. Alfalfa, cottonseed, and cottonseed meal were added to balance the ration both when the grain portion was limited and when the full feeds of grain were given.

A number of experiments over a period of five years have all given similar general results and show that yearling steers can be highly fattened in about 200 days by the use of large amounts of ground hegari fodder and limited amounts of added concentrates consisting of grain, alfalfa, cottonseed, and cottonseed meal.

In fattening steers by use of limited grain rations, typical lots consumed per steer 3,425 pounds of ground hegari fodder containing 20 per cent grain and, in addition, 426 pounds of ground threshed milo with small amounts of alfalfa, cottonseed, and cottonseed meal to balance. The rations carried about 70 per cent net roughage and 30 per cent total concentrates, if it be assumed that the grain in the ground roughage is as effective as the ground threshed grain, however, it is obviously somewhat less effective. Animals on such a ration made 30 pounds more gain but used 42 days more time than did those on full grain ration which received 2,046 pounds ground hegari fodder carrying 20 per cent and to which was added 1,104 pounds ground threshed milo as well as supplements of alfalfa, cottonseed, and cottonseed meal to complete the ration. This ration, not counting the protein supplement carried 48 per cent grain and 52 per cent net roughage and while the total feed was 18 per cent less in weight, it was 17 per cent more expensive than that fed in the limited grain ration because of the higher proportion of expensive grain.

These experiments have also shown that ground hegari fodder with 20 per cent grain in heads is a more useful feed for fattening than alfalfa hay. The limited grain rations, having produced better gains at less total cost for feed than the full grain ration, have included 45 per cent more alfalfa hay and hegari fodder, both of which are available locally. In several instances whole cottonseed have been included in the rations to the extent of some four pounds per animal per day and has proved to be a supplement to both the cottonseed meal and the grain portions of the rations. In fact, a study of the rations of the numerous experiments at Balmorhea shows that about the best ration so far found for yearling steers to be fed in dry lot for a period of some six months, is a daily ration per animal of 2½ pounds of cottonseed meal, four pounds whole cottonseed, 8 pounds of ground threshed milo, and hegari roughage containing heads of which the animals usually consume from 6 to 8 pounds per day. In general, with feeding periods ranging from 140 to 210 days, the feed required per 100 pounds of gain averages 425 pounds of concentrates and 525 pounds of roughages resulting in an average daily gain of 2.28 pounds.

These results are a little better on the average than those obtained in the experiments in

other sections of the state and they are quite as good as those reported in experiments in the corn belt states dealing with limited feeding of grain and for that matter, the full feeding at Balmorhea compares favorably with full feeding anywhere. Thus it may be seen that insofar as the Pecos Valley region can produce grain sorghum and grain sorghum roughages and alfalfa, such feeds can be utilized in the fattening of locally grown feeder steers with confidence that the steers fed locally will be able to compete easily with such of those feeder steers as must find a market elsewhere where feed is available.

Minerals for Milk Production

The annual cycle of mineral and nitrogen metabolism of the milch cow as affected by alfalfa hay, timothy hay, bone flour and ground limestone has been studied by E. B. Forbes of Pennsylvania State College, on 12 cows for over a year in 28-day periods on the metabolism of sodium, potassium, calcium, magnesium, phosphorus, chlorine and nitrogen on rations with and without mineral supplements. Six of the rations contained alfalfa hay and six timothy hay, together with concentrates and maize silage. Of each group of six rations, two were supplemented with bone flour and two with ground limestone. All rations contained salt. The breeding performance of the cows was generally unsatisfactory. At the end of the experiment six were with calf, one had aborted, two had calved normally and three were farrow. The results of the investigation are given in 97 tables and 92 graphs. The composition of the milk with reference to each of the elements studied, and also nitrogen and fat, as determined in 28-day periods for the entire lactation, is given. Of the two cows on the low calcium ration of timothy hay, concentrates and maize silage, one was not in calcium equilibrium for the year, probably owing to illness following parturition. She produced 11,690 lb. of milk in 310 days. During the last 104 days of the experiment, however, this cow while dry retained calcium at the rate of 7.5 g. per day, which would have provided in 60 days all the calcium (448.7 g.) in her calf. The other with a very similar yield had retained 23.7 g. at the end of 365 days, and during the last 77 days of the experiment, while dry, retained calcium at the rate of 9.8 g. per day. Both cows retained enough phosphorus for two calves during the year.

Vitamin A for Livestock

T. S. SUTTON, Ohio State University

The vitamin A requirements of the dairy cow and the hen are greater than for humans because of the great production of milk and eggs.

Deficiency of vitamin A not only interferes with growth and causes eye infections, but interferes with reproduction.

It is not practical to feed fish oils to cows to secure vitamin A. A better way is to feed good quality roughage in the form of clover, alfalfa or soybean hay.

Milk from cows on pasture contains from two to ten times as much vitamin A as from cows fed dry roughage.

Vitamin A in silage and other roughage is protected to a certain extent by acid developed in fermentation.

Cottonseed meal fails to show toxicity when fed with vitamin A.

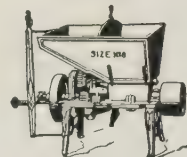
Vitamin A is easily oxidized and does not keep well in mixed feeds.

There is a close relationship between the color and vitamin A content of alfalfa. The greener the color the more vitamin A found in the hay.

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Rapidly crush ear corn (with or without husk) and grind all the small grains; either separately or mixed—mixed as they are being ground—not before or after. This saves time and labor.

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Poultry Feeds and Feeding

Vitamin D Important in Chick Raising

This factor is of unusual interest in poultry raising simply because it is, perhaps, the one that is most likely to be lacking in the rations for early chicks and hens that lay eggs during the fall and winter. This factor makes it possible, when present, to digest and assimilate minerals. Young chicks grow rapidly if normal and thus require a liberal supply in order to build normal bones. The laying hen must also digest and assimilate a large amount of mineral (calcium carbonate) in order to build normal egg shells. When vitamin D is lacking the young chick develops leg weakness, or rickets, and the laying hen develops "egg paralysis."

When this vitamin is low in a ration then a more liberal supply of calcium and phosphorus in the ration will aid in delaying the extreme effects of rickets. On the other hand, if the antirachitic factor is liberally supplied in a ration then the calcium and phosphorus supply may be lowered without causing rickets. For many years leg weakness, or rickets, was the cause of extremely heavy loss among winter and early spring chicks. Chicks suffering from rickets have low bone ash and the calcium and inorganic phosphorus of the blood are not in normal relation.

There is no known way of analyzing a food substance chemically and determining its vitamin D content. The only way to measure the amount of vitamin D in a product is to feed it to an experimental animal which receives a ration known to be otherwise free of vitamin D, but complete as regards all other nutritional factors. The chemist has used this fact to test the effectiveness of different brands of fish oils, irradiated products such as irradiated yeasts, and other materials that either naturally carry this vitamin or can be activated so as to become dependable sources of this vitamin.

Our common grains, grain by-products, green feeds, and animal protein feeds do not supply this vitamin. On the other hand, the yolks of eggs will supply this vitamin provided the hens that produced the eggs had in turn an abundant supply. In fact, the first successful attempt at rearing chicks inside in the absence of sunshine depended upon the fact that eggs were used in the ration. Shortly afterwards it was discovered that cod liver oil could be used very effectively, and since that time cod liver oil has come into common use in chick rations.

Burbot liver oil was also demonstrated to be rich in vitamin D. Work at other experiment stations demonstrated that several of the other fish oils such as halibut and sardine oil could be used. Undoubtedly the livers of many kinds of fish and in many instances the oil obtained from the entire fish will be found to be a good source of this vitamin. Tests at this station with dried pork liver were not satisfactory, but tests with cod liver meal (the dried residue after the oil has been extracted) did show satisfactory results. The samples of cod liver meal tested showed that two and a half pounds of cod liver meal were nearly equal to one pound of cod liver oil.

When infertile eggs are used, one egg daily for twenty to thirty chicks is used. As the chicks grow the egg allowance is increased. In trials at this station raw eggs have been beaten with milk and the combination used to moisten a mash. If there is any danger that the flock is susceptible to pullorum disease then the eggs should be hard boiled.

Cod Liver Oil May Be Used.—Cod liver oil is most commonly used as an extra source of the antirachitic factor. Sardine oil produced on the Pacific Coast is in common use in some sections. Undoubtedly other fish oils will be found practical in other sections. With com-

binations such as are suggested in this bulletin one-half per cent of cod liver oil will prove adequate under farm conditions even though the chicks are secured in February or early March.

Trials at this Station have not shown any detrimental effects from feeding cod liver oil to chicks. Cod liver oil as 5% of the ration has been used in several instances without any apparent injury to the chicks. At the same time it has been shown that the use of more than one per cent of some grades of cod liver oil is likely to impart a fishy flavor to the flesh of the bird. This flavor is especially pronounced when cod liver oil fed poultry is used as cold chicken, as in salads. This objectionable flavor disappears if the cod liver oil is omitted from the ration for two weeks before slaughter. Numerous trials with rations carrying one-half of one per cent of good grade of cod liver oil have failed to produce chicks in which the fishy flavor could be detected.

The cod liver oil can be mixed with grains and stored for three to six months without losing its antirachitic properties. At the same time it is well to bear in mind that freshly ground feeds produce better results than meals that have been ground and stored. It is a good plan to grind only as much feed as will be used in about one month. Under storage conditions the vitamin A potency is much more likely to be lost than is the vitamin D. Certainly, grinding and mixing often more than once a month is unnecessary.—Wis. Bull. 434.

U. S. Gets World's Poultry Congress

The Seventh World's Poultry Congress and Exposition will be held in the United States in 1939. Altho the World's Poultry Science Ass'n, of which the Congress is the triennial meeting, has been meeting since organization in 1912, and the Congress has been held every three years since 1921, this is the first time it is coming to the United States.

Members of the poultry and allied industries met almost 100 strong at the Raleigh hotel, Washington, D. C., Nov. 16 and 17, to organize plans for this international gathering, with its representation and exhibits from 60 foreign countries. A com'te of 22, headed by James E. Rice, Trumansburg, N. Y., pres. of the Northeastern Poultry Producers Council, was named to push forward the plans. On the com'te are representatives from every branch of the poultry industry, including Ralph Field, executive vice-pres. American Feed Manufacturers Ass'n, for the feed industry.

The U. S. Department of Agriculture followed this planning meeting with appointment of a com'te of seven to work with representatives of other government departments, and com'tes from the various commercial and scientific poultry interests. On this com'te are Berley Winton, Buro of Animal Industry; W. D. Termohlen, A.A.A.; Robert R. Slocum, Buro of Agricultural Economics; H. L. Shrader, Extension Service; T. L. Swenson, Buro of Chemistry and Soils; Ernest G. Moore, Director of Information, Department of Agriculture; and Ruth Van Deman, Buro of Home Economics.

Past poultry congresses have been at The Hague, Holland, in 1921; Barcelona, Spain, 1924; Ottawa, Canada, 1927; London, England, 1930; Rome, Italy, 1933; and Leipzig, Germany, 1936.

Poultry congresses are the medium thru which the highest authorities in the poultry world discuss their problems and work out the solutions. This information is taken home to the individual countries and adapted

to the betterment of the industry in those countries.

At these congresses the latest in research is presented. A congress is more than a chicken show, tho a live bird exhibition is part of it. This live bird exhibit is unique in that it is the only exhibit of live stock in the world that has stock from all over the globe. Twenty to forty countries have contributed their best birds to this one exhibition. In addition the congresses have had educational exhibits that depict the national poultry activities. Then there are commercial exhibits from several countries. It is an opportunity for the home country to show the rest of the world the commercial equipment of all kinds that may be manufactured in that country.

For the country in which it is held the World's Poultry Congress and Exposition is an event of a lifetime. Those working on the 1939 U. S. Poultry Congress expect to draw an attendance exceeding a million.

Mass Production of Turkeys

Few if any institutions in the country go in for raising and handling turkeys on a mass production basis to a greater extent than the Maplecrest Turkey Farms at Wellman, Ia.

Every day at Maplecrest nine carloads of mill feeds are unloaded and trucks shuttle busily back and forth, carrying feed from the mixing plant to the farms of the community.

A. C. Gingerich, head of the turkey producing organization, contracts with 170 farmers in the neighborhood of Wellman to raise the turkeys he hatches at the central plant. Some of the farmers handle from 2,000 to 3,000 birds annually. The farmers buy their feed from the Maplecrest Farms and sell the turkeys back to the farms when they are ready for market.

Maplecrest Farms intend to sell 500,000 turkeys during the holiday season this year. This will total between 150 and 160 carloads of dressed birds.

Poultry Feeding Suggestions

A. R. WINTER, Ohio State University

The chick starting ration should contain about 20 per cent protein.

The protein content may be reduced to about 16 per cent when the birds are 8 to 12 weeks old.

When 5 per cent or more of dried milk and 40 per cent or more of yellow corn are included in the ration, the alfalfa leaf meal may be omitted.

Soybean oil meal may be used to replace half of the animal protein concentrates in poultry rations.

One pound of mineral mixture should be included in the ration with every 4 or 5 pounds of vegetable protein concentrates used.

A satisfactory mineral mixture for feeding with vegetable protein concentrates consists of bone meal 40, limestone 40, and salt 20.

An allmash laying ration with nothing but milk to drink makes a satisfactory chick starting ration. When the chicks are about 8 weeks old the milk may be diluted with an equal amount of water.

When the birds are about 12 weeks old, the milk may be entirely replaced by water.

About 12 per cent dried milk added to the laying mash would give the same results as giving nothing but milk to drink.

A satisfactory oil for supplying vitamin D should protect against rickets when fed at .5 per cent level of total feed consumed. Therefore, when the mash is to be fed with grain, it should contain about 1 per cent cod liver oil.

Turkey starting rations should contain about 25 per cent protein.

Slipped tendon is most often caused by too much bone meal or meat scrap in the ration.

Processed and Unprocessed Cod Liver Oils Compared

Analysis of six samples of cod-liver oil and one of sardine oil used in an experiment by H. S. Gutteridge, Canada, showed measurable quantities of nitrogenous residue, ranging from .0003% in purified medicinal cod-liver oil to .031% in the sun-rendered product. The oils high in nitrogenous residue were also high in free fatty acids.

Removal of the residue by chemical means produced oils that gave greater growth in chicks, particularly cockerels, and more efficient production of eggs and gains in body weight by hens during their first laying year. The experimenter concludes that purified oils, cleaned of the residue and free fatty acids by chemical means are the only kinds suitable for use in poultry feeds.

Wheat Shorts Check Slipped Tendons

Wheat gray shorts play leading role in a corrective ration for slipped tendons of brooder chicks, developed by R. M. Sherwood, Texas A. & M. College.

Mr. Sherwood found that bone meal, which supplies a large amount of phosphorus when fed in large quantities and with an insufficient amount of lime, was a prolific cause of the trouble. In his tests he substituted rice products, wheat products, cottonseed products and oats products.

Rice bran brought considerable relief. But wheat gray shorts gave emphatic results. Wheat gray shorts, he found, should be fed liberally. Indications are that wheat gray shorts should constitute 20 to 30% of the ration.

Gray shorts from hard wheat are different from gray shorts made from soft wheat. Gray shorts from the hard wheat produced only one-third as many slipped tendons as that from the soft wheat and produced heavier chickens by about 10 lbs. per 100, but the wheat gray shorts made from the soft wheat produced slightly cheaper gains than did the hard wheat shorts, the difference being very slight.

Rations without shorts resulted in 13 times as many slipped tendons as did rations with 20% gray shorts. When the proportion of shorts was increased to 30% of the ration, slipped tendon was further slightly reduced. The 20% shorts ration increased the gains in weight over the no-shorts ration by about 25%, at a lower cost.

White Leghorn chicks of similar breeding and uniform in age, size, etc., were used in this

2-year experiment and the feeding period for all lots was 11 weeks. All the chicks were supplied with the vitamins A, D and G. The ordinary minerals of the ration were balanced. More than 2,000 chickens were studied.

These experiments also showed that chicks receiving wheat gray shorts feather earlier and the plumage is better at marketing age.

Cause and Prevention of Perosis

H. S. WILGUS, JR., L. C. NORRIS, AND G. F. HEUSER.

Perosis is an anatomical deformity of the tibial-metatarsal joint of young chickens. Experiments have found that the common c. p. grade of calcium carbonate, hydroxide and chloride as well as of mono-, di- and tri-calcium phosphates and the mono-sodium phosphate aggravate the occurrence of this disorder as much as steamed bone meal.

But a technical grade of mono-calcium phosphate used in these experiments actually possessed a preventive rather than a causative effect. A spectroscopic examination of this salt showed the presence of considerable manganese and traces of iron. A qualitative analysis indicated the presence of aluminum as well.

Subsequent addition of an equivalent amount of manganese, 0.0025%, to a basal diet containing 0.001% demonstrated that this element was responsible for the preventive action of this salt. This amount of manganese was found to be quite effective in preventing perosis at levels of 1.0 and 1.2% of calcium and at levels of 0.8 and 1.2% of phosphorus. The addition of a mixture containing 0.0025% each of manganese, aluminum and iron was entirely preventive at the lower calcium and phosphorus levels and had a slight beneficial effect on growth. Further experiment showed that aluminum and zinc had a similar but less effective preventive action. The perosis preventing property of common feed stuffs was roughly in proportion to their manganese content.

Perosis is due to the lack of certain inorganic elements, of which manganese is notable, and its occurrence is aggravated by an excess of calcium and probably of phosphorus.

Dr. J. S. Hughes comments on these experiments with: "Workers at other schools, particularly Wisconsin, feel that the lack of manganese is not the real cause of perosis. They feel there is some other factor in the diet responsible for this condition and that the amount of minerals in the diet merely aggravate the condition. It is important, how-

ever, to know that under ordinary feeding conditions the addition of a small amount of manganese seems to have a very beneficial effect."

New York Exposition Attracts Crowd

Practically everything used by poultrymen was on display at the Second Poultry Industries Exposition, under direction of the North-eastern Poultry Producers Council in the Port Authority Building, New York City, Nov. 10-14.

The title "Best Hen of the Year" was awarded a White Leghorn bred by Otto Ruehle & Sons, Pleasant Valley, N. Y., which produced 327 eggs in 365 days.

Frank Neborsky, 16 year old Lambertville, N. J., lad, was named "Best Poultry Boy of the Year." He made \$2,288 during the year with 1,200 chicks and 600 laying hens, because of his ability to sell the 6,559 dozen eggs his hens produced.

Included in the displays were feeds, feed ingredients, poultry litters, incubators, brooders, poultry remedies and many other products and activities associated with poultry.

Among the exhibitors were: Kasco Mills, Inc.: Flushing egg mash and hatching egg mash.

Health Products Corp.: A large, illuminated picture of its plant, and literature about Clo-trate.

Quaker Oats Co.: An animated display emphasizing Ful-O-Pep poultry feeds.

Poultry Production

by Lippincott and Card

(5th Edition—Revised)

Every elevator that grinds and mixes poultry feeds needs this new, quick-reference volume, devoted to practical management of poultry enterprises. Prepared by noted authorities, it includes 238 illustrations. Considers culling, prevention and cure of diseases, incubation, brooding, housing, ventilation, etc., and gives 63 pages to selection and compounding of feeds, to feeding methods and the nutrient requirements of poultry.

Bound in cloth, 723 pages, fully cross indexed. Weight 4 lbs. Price, \$4.00, plus postage.

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Practical Poultry Farming

By L. M. Hurd

This revised and enlarged edition is right up-to-date and contains all important discoveries in poultry raising made in recent years.

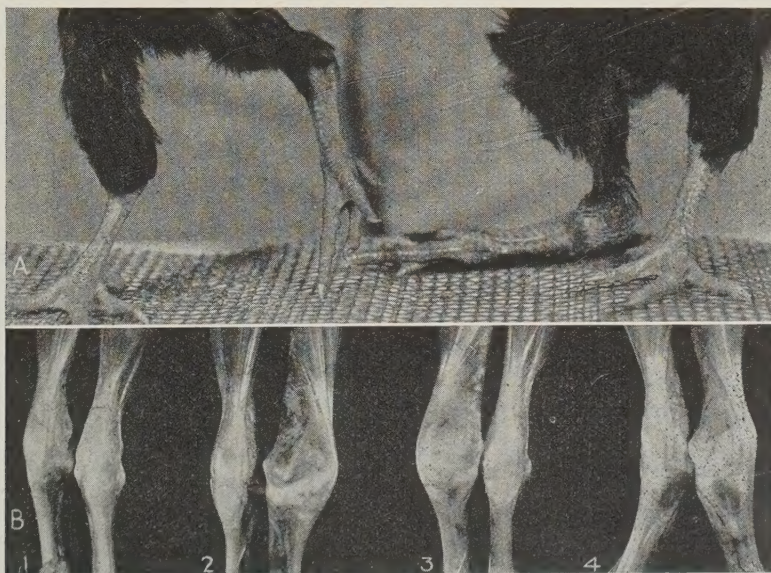
The book contains the latest information on feeding, a complete discussion of the new vitamin G, practical information on the two-story poultry house and heating, disinfecting incubators, battery brooding and raising chicks on screened platforms, and the latest discoveries in treating pests and diseases, including Leukemia, and the newest information on disinfecting houses. This edition also describes the new methods of feeding turkeys.

Printed on enamel book paper from large type and well bound in cloth. 480 pages, 33 chapters, and 200 engravings. Weight 2 lbs. Price \$2.50 plus postage.

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(A) Deformed condition of legs of broilers. (B) Hock joints of broilers showing slipped tendons. (1) The normal condition, (2) the tendon has slipped from the condyle on the right leg, (3) the tendon has slipped on the left leg, and (4) tendons have slipped on both legs. Circular 178, Kansas Experiment Station.

New!

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Feeds & Feeding

by

F. B. Morrison

This edition has been entirely rewritten and revised to contain the latest information on live stock feeding and nutrition. Entirely new compilations of recent analyses of American feeds are presented in the Appendix Tables. Extensive data are presented concerning the mineral and vitamin content of important feeds.

The only authoritative book on the subject of animal feeds and feeding. The result of over 38 years of exhaustive work in experimentation.

Its three parts, each divided into numerous chapters, cover "Fundamentals of American Nutrition," "Feeding Stuffs," "Feeding Farm Animals." This new edition contains approximately 40% more material than the 19th edition, and contains 1,156 pages, including 95 informative illustrations. This book will enable any grinder and mixer of feeds more intelligently to suggest and compound worth while rations. Beautifully bound in black keretol, durable covers; weight 5 pounds, price \$5.00 plus postage. Send for your copy now.

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Vitamins in Poultry Feed

By GUSTAVE F. HEUSER of Cornell University

The importance of vitamins in poultry feed cannot be stressed too much. Without them, no poultry ration is complete. In the past, proteins, carbohydrates, fats, and mineral salts were thought the only important feed nutrients, but vitamins must now be given equal rank with them. In the future, successful poultrymen will need to give more consideration to this phase of poultry feeding.

Unfortunately, while it is easy enough to state that the vitamin requirement of poultry is great, it is not so easy to say just how much of any vitamin is needed, as this has not yet been accurately determined. The vitamin content of poultry feeds is indicated in the table herewith.

Yellow corn is an excellent source of vitamin A. Where the ration contains from 40 to 50 per cent of yellow corn, chicks and laying hens do well for long periods of time. However, the possibility must be kept in mind that the quantity of vitamin A supplied by this amount of yellow corn may be border line and that the effects of partial vitamin-A deficiency may eventually show up if birds are restricted to this quantity of vitamin A thruout their entire life cycle.

However, where the practice of adding 5 to 10 per cent of bright green, fragrant alfalfa meal to poultry mash is followed, the danger of supplying a border-line quantity of vitamin A is done away with, as alfalfa meal of this character is also a good source of vitamin A.

Still another practice, that of using 1 per cent of cod-liver oil in poultry mashes, has brought about an increase in the vitamin-A content of the ration, as cod-liver oil is one of the richest sources of this vitamin. Yet cod-liver oil is not used essentially for this purpose but for vitamin D.

Feeds	Vitamin Content of Poultry Feeds					
	Vitamins					
	A	B	C	D	E	G
Cereals:						
Barley	0	2	0	—	—	0
Corn, white	0	3	0	—	—	0
Corn, yellow	2	3	0	—	2	0
Oats	0	2	0	—	2	0
Oats, sprouted	1	2	1	—	—	—
Wheat	0	3	0	—	2	0
Cereal by-products:						
Hominy	0 to 1	3	0	—	—	0
Gluten feed	—	—	0	—	—	0
Wheat bran	0	2	0	—	2	0
Wheat middlings	0	3	0	—	3	0
Animal products:						
Buttermilk	1	0 to 1	—	—	—	2
Buttermilk, dried	1	0 to 1	—	—	—	3
Cod-liver oil	4	0	0	4	—	0
Eggs	2	+?	0	2	—	—
Fish meal	0	0	0	—	—	—
Meat scrap	0	0	0	0	—	1
Skim milk	1	0 to 1	—	0	—	2
Skim milk, dried	1	0 to 1	—	0	—	3
Whole milk	2	1	1	1	—	2
Forage:						
Alfalfa, green	3	1	3	1	3	3
Alfalfa, well cured	3	1	0	1	3	3
Alfalfa, bleached	0	—	0	—	—	—
Cabbage, white portion	1	+?	3	—	—	—
Cabbage, green leaves	2	+?	3	—	—	—
Clover, green	3	1	3	1	3	3
Grasses, green	3	1	3	1	3	3
Vegetables and fruits:						
Carrots, yellow	2	+?	2	—	—	—
Mangels	0	0	0	—	—	—
Potatoes	0	+?	2	—	—	—
Rutabagas	—	+?	3	—	—	—
Tomatoes	2	+?	3	—	—	—
Miscellaneous:						
Yeast	0	4	0	0	0	4

Explanation of table: 0 indicates none or no appreciable amount of vitamins; 1, 2, 3, 4, indicates increasing amount of vitamin; +?, indicates vitamin present but relative amount unknown; —, indicates evidence of vitamin content lacking or insufficient.

Succulent green alfalfa, clover, and mixed grasses must not be overlooked, for these too contain large amounts of this vitamin.

It appears, therefore, that cheap and excellent sources of vitamin A are available for feeding poultry and that where sound judgment is used, the effects of vitamin-A deficiency should never be obtained. Moreover, there is little possibility

of feeding too much of this vitamin, as the range between the minimum quantity needed and the maximum amount it is safe to give, is probably great.

The B vitamin is found in fairly large quantities in all unprocessed cereals. It is concentrated in the germ. For this reason, cornmeal made from the entire corn kernel should be insisted upon.

Wheat by-products likewise are rich in vitamin B where, in the usual process of milling, they contain the wheat germ.

Other excellent sources of this vitamin, such as good succulent pasturage, bright green, fragrant alfalfa meal, well-cured alfalfa and clover hay, and cabbage, are readily available to most poultrymen.

The richest known source of vitamin B is yeast, but, with few exceptions, the addition of yeast to common poultry rations has not improved them. For this reason and because of high cost, the inclusion of small quantities of yeast in poultry rations has not become general.

Vitamin D is perhaps the most important vitamin to be considered in feeding poultry as it is not present in any of the common poultry feeds. There is no difficulty whatever concerning this vitamin as long as poultry receive exposure to direct sunshine. The short ultra-violet rays of the sun, penetrating the surface layers of the skin, cause synthesis of sufficient vitamin D to satisfy all needs for this vitamin.

But when poultry are confined for long periods of time in such a manner that the sunlight to which they are exposed passes thru common window glass, no benefit is received, as this grade of glass filters out the health-giving ultra-violet rays. However, the more common practice of providing poultry kept in confinement with sufficient vitamin D is by means of cod-liver oil. This product is an exceedingly rich source of this vitamin and consequently can be used in small amounts, 1/2 to 1 per cent of the total feed consumed. The smaller amount should be sufficient if the oil used is of good potency. In order to get a consumption of 1/2 per cent of cod-liver oil, the usual method is to add 1 pint, or 1 pound, of oil to the mash. A few poultrymen who feed grain in hoppers get the same results by adding this quantity of oil to the grain mixture. It can also be fed in a moist mash at the rate of 1/8 pound daily per 100 hens.

Cod-liver oil should not be fed in greater amounts than required, as poorer results might be obtained.

Vitamin E is found in the cereals, the wheat by-products, the wheat germ, and the leafy green, plant tissue. Fresh green alfalfa and



Dr. A. Eugene Hardy, now with Syntho Products Corporation.

clover are rich in this vitamin and no doubt also the dried roughages produced from them. As long as non-degerminated cereals and non-degerminated wheat by-products, together with leafy green food, are used in feeding poultry, there is little danger of putting together a ration deficient in vitamin E.

Vitamin G is present in large quantities in milk and its by-products. Just how much dried milk is required to meet the vitamin-G requirement of poultry has not been determined, but the use of 5 to 10 per cent in the mash brings marked improvement in the ration.

Good leguminous hay and alfalfa meal are also rich in this vitamin, but whether richer or poorer than dried-milk by-products is not known.

Not much can be said concerning the possibility of new vitamins which some investigators are beginning to suggest. To avoid any difficulties which the future may show, due to them, the poultryman should adhere to the use of natural feedstuffs, especially such protective feeds as green food and milk and of those feedstuffs which are the least processed in their manufacture and preparation for market.—Cornell Bull. 222.

Steam Dried v. Flame Dried Menhaden Fish Meal

M. H. Berry of the Maryland Agricultural Exp. Station and J. R. Manning of the U. S. Bureau of Fisheries compared flame dried and steam dried menhaden meal in feeding growing heifers.

Two separate feeding trials, each 120 days in length, were conducted, using animals from the Maryland Experiment Station herd. The work was started during the winter of 1934-35 and repeated the winter of 1935-36.

Group feeding was practiced throughout both trials. Six pounds of clover hay (U. S. No. 2 grade), and four pounds of a grain ration composed of two parts ground yellow corn, one part wheat bran and one part fish meal were fed daily per heifer. Fish meal, fed at the rate of one pound per day per heifer, made up 10 per cent of the total daily ration fed. Salt was kept before the animals in their feed troughs. Fresh water was kept accessible at all times.

In both trials the flame dried group made slightly larger average daily gains in weight than the steam dried group. This difference, however, is not significant.

At the conclusion of the first feeding trial, conducted during 1934-35 there was a decided difference in general body conditions and appearance between the two groups of heifers, the advantage being in favor of the group fed the flame dried fish meal. The group fed the flame dried product was in a fine condition of flesh and presented a very smooth, thrifty appearance throughout the trial. The heifers in the group receiving the steam dried fish meal were in a poor state of flesh at the end of the trial and presented a very rough, unthrifty appearance. No definite reason could be ascertained for this lack of flesh and general unthrifty appearance.

As it seemed best to secure additional data, the trial was repeated during the winter of 1935-36.

The growth results secured in Trial II were practically the same as those secured in Trial I although the heifers were slightly older. The rough, unthrifty appearance and lack of condition that was evident with the heifers in the steam dried group in Trial I did not appear in Trial II. No differences in the condition of the animals on the two different meals in the second trial were apparent to the eye.

No difficulty was experienced in getting the heifers to eat readily the grain ration containing fish meal.

Conclusions.—The comparative feeding value of steam dried and flame dried menhaden fish meal was determined by conducting two separate 120-day feeding trials dur-

ing two successive years with two groups of yearling heifers. Fish meal made up 10 per cent of the total ration fed daily per heifer.

There was no significant difference between the two meals in either trial in respect to gains in weight produced. The only difference was the better general body condition of the animals in the flame dried group in Trial I. There was no apparent difference in body condition or physical appearance of the two groups in Trial II.

No difference was noted in the palatability of the two meals.

Insofar as the results secured from this series of feeding trials are concerned, it was definitely demonstrated that there was no difference in growth-promoting properties between the two meals when fed on an equal weight basis.

Wisconsin District Expands

The name of the New Richmond District Dealers club was changed to the Northwestern Wisconsin District club of the Central Retail Feed Ass'n in a recent meeting at Amery, Wis. Territory for the district organization was expanded to include Polk, Barron, St. Croix, Pierce, Burnett and Dunn counties. Turtle Lake was selected as the meeting place for a December gathering.

Officers elected are A. J. Hayman, Dresser Junction, pres.; Emil Wick, Lewis, vice-pres., and Harold Aamodt, Rice Lake, sec'y-treas.

During September 1,087 reporting mills ground 40,055,179 bus. of wheat. An average of 276 pounds of wheat produced a barrel of flour.—Department of Commerce.

Truck Loads to Bushels 6,600—17,590

Direct Reduction Grain Tables

Reducing Weights to Bushels of 48 Pounds for Barley, Buckwheat and Hungarian Grass Seed

Weight (Lbs.)	Bushels (48 lbs.)	Weight (Lbs.)	Bushels (48 lbs.)	Weight (Lbs.)	Bushels (48 lbs.)
6,600	137.5	10,000	208.3	13,400	279.2
6,700	139.6	10,100	210.4	13,500	281.3
6,800	141.7	10,200	212.5	13,600	283.3
6,900	143.8	10,300	214.6	13,700	285.4
7,000	145.8	10,400	216.7	13,800	287.5
7,100	147.9	10,500	218.8	13,900	289.6
7,200	150.0	10,600	220.8	14,000	291.7
7,300	152.1	10,700	222.9	14,100	293.8
7,400	154.2	10,800	225.0	14,200	295.8
7,500	156.3	10,900	227.1	14,300	297.9
7,600	158.3	11,000	229.2	14,400	299.9
7,700	160.4	11,100	231.3	14,500	302.0
7,800	162.5	11,200	233.3	14,600	304.1
7,900	164.6	11,300	235.4	14,700	306.2
8,000	166.7	11,400	237.5	14,800	308.3
8,100	168.8	11,500	239.6	14,900	310.4
8,200	170.8	11,600	241.7	15,000	312.5
8,300	172.9	11,700	243.8	15,100	314.6
8,400	175.0	11,800	245.8	15,200	316.7
8,500	177.1	11,900	247.9	15,300	318.8
8,600	179.2	12,000	250.0	15,400	320.9
8,700	181.3	12,100	252.1	15,500	323.0
8,800	183.3	12,200	254.2	15,600	325.1
8,900	185.4	12,300	256.3	15,700	327.2
9,000	187.5	12,400	258.3	15,800	329.3
9,100	189.6	12,500	260.4	15,900	331.4
9,200	191.7	12,600	262.5		
9,300	193.8	12,700	264.6		
9,400	195.8	12,800	266.7		
9,500	197.9	12,900	268.8		
9,600	200.0	13,000	270.8		
9,700	202.1	13,100	272.9		
9,800	204.2	13,200	275.0		
9,900	206.3	13,300	277.1		

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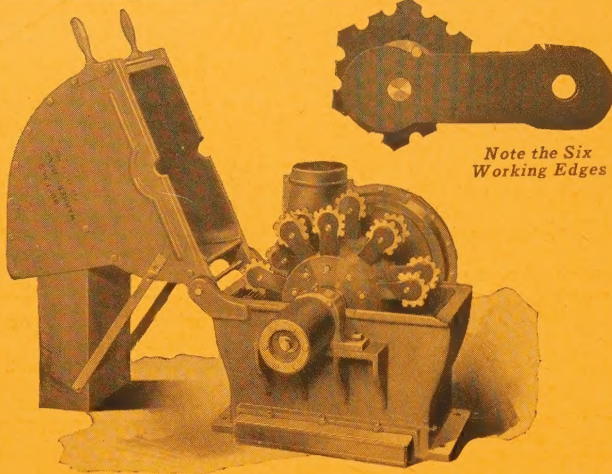
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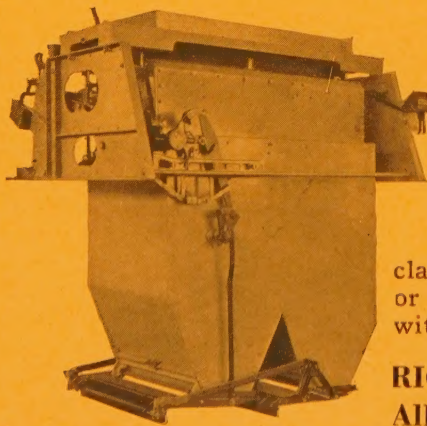
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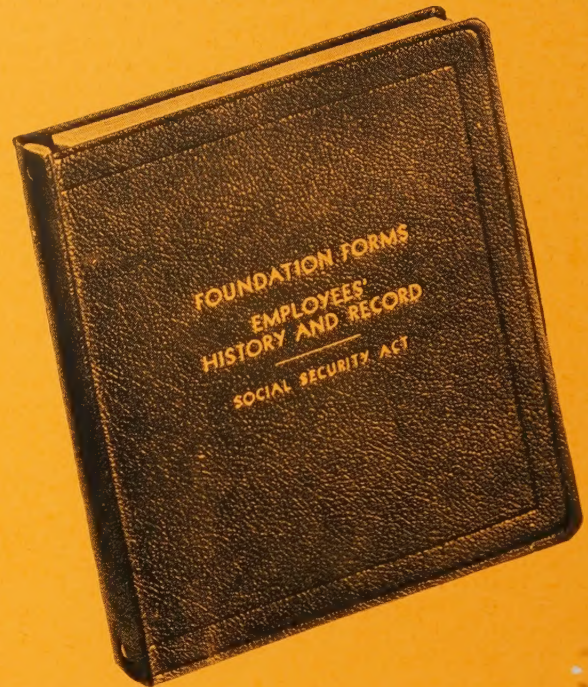
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